PROPOSED APPENDICES C.1 – C.6

The Texas State Plan for the Control of Designated Facilities and Pollutants

Proposed Revisions: January 11, 2023

APPENDIX C.1

2016 MSW Landfill Emission Guidelines (40 CFR 60 Subpart Cf)

2021 MSW Landfill Federal Plan (40 CFR 62 Subpart OOO)

Pollutant	Units (7 percent oxygen, dry basis)	HMIWI Emissions limits	Averaging time [1]	Method for demonstrating compliance [2]
Dioxins/furans ..	ng/dscm total dioxins/furans ($gr/10^9$ dscf) or ng/dscm TEQ ($gr/10^9$ dscf).	240 (100) or 5.1 (2.2) ..	3-run average (4-hour minimum sample time per run).	EPA Reference Method 23 of appendix A–7 of part 60.
Hydrogen chloride.	ppmv	810	3-run average (1-hour minimum sample time per run).	EPA Reference Method 26 or 26A of appendix A–8 of part 60.
Sulfur dioxide ...	ppmv	55	3-run average (1-hour minimum sample time per run).	EPA Reference Method 6 or 6C of appendix A–4 of part 60.
Nitrogen oxides	ppmv	130	3-run average (1-hour minimum sample time per run).	EPA Reference Method 7 or 7E of appendix A–4 of part 60.
Lead	mg/dscm (gr/10^3 dscf).	0.50 (0.22)	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.
Cadmium	mg/dscm (gr/10^3 dscf).	0.11 (0.048)	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.
Mercury	mg/dscm (gr/10^3 dscf).	0.0051 (0.0022)	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.

[1] Except as allowed under § 60.56c(c) for HMIWI equipped with CEMS.
[2] Does not include CEMS and approved alternative non-EPA test methods allowed under § 60.56c(b).

[74 FR 51407, Oct. 6, 2009]

Subpart Cf—Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills

SOURCE: 81 FR 59313, Aug. 29, 2016, unless otherwise noted.

§ 60.30f Scope and delegated authorities.

This subpart establishes Emission Guidelines and compliance times for the control of designated pollutants from certain designated municipal solid waste (MSW) landfills in accordance with section 111(d) of the Clean Air Act and subpart B of this part.

(a) If you are the Administrator of an air quality program in a state or United States protectorate with one or more existing MSW landfills that commenced construction, modification, or reconstruction on or before July 17, 2014, you must submit a state plan to the U.S. Environmental Protection Agency (EPA) that implements the Emission Guidelines contained in this subpart. The requirements for state and federal plans are specified in subpart B of this part with the exception that §§ 60.23 and 60.27 will not apply. Notwithstanding the provisions of § 60.20a(a) in subpart Ba of this part, the requirements of §§ 60.23a and 60.27a will apply for state plans submitted after September 6, 2019, and federal plans, except that the requirements of § 60.23a(a)(1) will apply to a notice of availability of a final guideline document that was published under § 60.22(a). Likewise, the requirements of § 60.27a(e)(1) will refer to a final guideline document that was published under § 60.22(a).

(b) You must submit a state plan to the EPA by August 29, 2019.

(c) The following authorities will not be delegated to state, local, or tribal agencies:

(1) Approval of alternative methods to determine the NMOC concentration or a site-specific methane generation rate constant (k).

(2) [Reserved]

[81 FR 59313, Aug. 29, 2016, as amended at 84 FR 44555, Aug. 26, 2019]

§ 60.31f Designated facilities.

(a) The designated facility to which these Emission Guidelines apply is each existing MSW landfill for which construction, reconstruction, or modification was commenced on or before July 17, 2014.

(b) Physical or operational changes made to an existing MSW landfill solely to comply with an emission guideline are not considered a modification

or reconstruction and would not subject an existing MSW landfill to the requirements of a standard of performance for new MSW landfills.

(c) For purposes of obtaining an operating permit under title V of the Clean Air Act, the owner or operator of an MSW landfill subject to this subpart with a design capacity less than 2.5 million megagrams or 2.5 million cubic meters is not subject to the requirement to obtain an operating permit for the landfill under part 70 or 71 of this chapter, unless the landfill is otherwise subject to either part 70 or 71. For purposes of submitting a timely application for an operating permit under part 70 or 71, the owner or operator of an MSW landfill subject to this subpart with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters on the effective date of EPA approval of the state's program under section 111(d) of the Clean Air Act, and not otherwise subject to either part 70 or 71, becomes subject to the requirements of §70.5(a)(1)(i) or §71.5(a)(1)(i) of this chapter 90 days after the effective date of such section 111(d) program approval, even if the design capacity report is submitted earlier.

(d) When an MSW landfill subject to this subpart is closed as defined in this subpart, the owner or operator is no longer subject to the requirement to maintain an operating permit under part 70 or 71 of this chapter for the landfill if the landfill is not otherwise subject to the requirements of either part 70 or 71 and if either of the following conditions are met:

(1) The landfill was never subject to the requirement to install and operate a gas collection and control system under §60.33f; or

(2) The landfill meets the conditions for control system removal specified in §60.33f(f).

(e) When an MSW landfill subject to this subpart is in the closed landfill subcategory, the owner or operator is not subject to the following reports of this subpart, provided the owner or operator submitted these reports under the provisions of subpart WWW of this part; 40 CFR part 62, subpart GGG; or a state plan implementing subpart Cc of this part on or before July 17, 2014:

(1) Initial design capacity report specified in §60.38f(a).

(2) Initial or subsequent NMOC emission rate report specified in §60.38f(c), provided that the most recent NMOC emission rate report indicated the NMOC emissions were below 50 Mg/yr.

(3) Collection and control system design plan specified in §60.38f(d).

(4) Closure report specified in §60.38f(f).

(5) Equipment removal report specified in §60.38f(g).

(6) Initial annual report specified in §60.38f(h).

(7) Initial performance test report in §60.38f(i).

§60.32f Compliance times.

Planning, awarding of contracts, installing, and starting up MSW landfill air emission collection and control equipment that is capable of meeting the Emission Guidelines under §60.33f must be completed within 30 months after the date an NMOC emission rate report shows NMOC emissions equal or exceed 34 megagrams per year (50 megagrams per year for the closed landfill subcategory); or within 30 months after the date of the most recent NMOC emission rate report that shows NMOC emissions equal or exceed 34 megagrams per year (50 megagrams per year for the closed landfill subcategory), if Tier 4 surface emissions monitoring shows a surface emission concentration of 500 parts per million methane or greater.

§60.33f Emission Guidelines for municipal solid waste landfill emissions.

(a) *Landfills.* For approval, a state plan must require each owner or operator of an MSW landfill having a design capacity greater than or equal to 2.5 million megagrams by mass and 2.5 million cubic meters by volume to collect and control MSW landfill emissions at each MSW landfill that meets the following 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 commenced construction, reconstruction, or modification on or before July 17, 2014.

(3) The landfill has an NMOC emission rate greater than or equal to 34 megagrams per year or Tier 4 surface emissions monitoring shows a surface emission concentration of 500 parts per million methane or greater.

(4) The landfill in the closed landfill subcategory and has an NMOC emission rate greater than or equal to 50 megagrams per year or Tier 4 surface emissions monitoring shows a surface emission concentration of 500 parts per million methane or greater.

(b) *Collection system.* For approval, a state plan must include provisions for the installation of a gas collection and control system meeting the requirements in paragraphs (b)(1) through (3) and (c) of this section at each MSW landfill meeting the conditions in paragraph (a) of this section.

(1) *Collection system.* Install and start up a collection and control system that captures the gas generated within the landfill within 30 months after:

(i) The first annual report in which the NMOC emission rate equals or exceeds 34 megagrams per year, unless Tier 2 or Tier 3 sampling demonstrates that the NMOC emission rate is less than 34 megagrams per year, as specified in § 60.38f(d)(4); or

(ii) The first annual NMOC emission rate report for a landfill in the closed landfill subcategory in which the NMOC emission rate equals or exceeds 50 megagrams per year, unless Tier 2 or Tier 3 sampling demonstrates that the NMOC emission rate is less than 50 megagrams per year, as specified in § 60.38f(d)(4); or

(iii) The most recent NMOC emission rate report in which the NMOC emission rate equals or exceeds 34 megagrams per year based on Tier 2, if the Tier 4 surface emissions monitoring shows a surface methane emission concentration of 500 parts per million methane or greater as specified in § 60.38f(d)(4)(iii).

(2) *Active.* An active collection system must:

(i) 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.

(ii) 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 5 years or more if active; or 2 years or more if closed or at final grade.

(iii) Collect gas at a sufficient extraction rate.

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

(3) *Passive.* A passive collection system must:

(i) Comply with the provisions specified in paragraphs (b)(2)(i), (ii), and (iv) of this section.

(ii) Be installed with liners on the bottom and all sides in all areas in which gas is to be collected. The liners must be installed as required under § 258.40 of this chapter.

(c) *Control system.* For approval, a state plan must include provisions for the control of the gas collected from within the landfill through the use of control devices meeting the following requirements, except as provided in § 60.24.

(1) A non-enclosed flare designed and operated in accordance with the parameters established in § 60.18 except as noted in § 60.37f(d); or

(2) A control system designed and operated to reduce NMOC by 98 weight percent; or when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen or less. The reduction efficiency or concentration in parts per million by volume must be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in § 60.35f(d). The performance test is not required for boilers and process heaters with design heat input capacities equal to or greater than 44 megawatts that burn landfill gas for compliance with this subpart.

(i) If a boiler or process heater is used as the control device, the landfill gas stream must be introduced into the flame zone.

(ii) The control device must be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in §60.37f.

(iii) For the closed landfill subcategory, the initial or most recent performance test conducted to comply with subpart WWW of this part; 40 CFR part 62, subpart GGG; or a state plan implementing subpart Cc of this part on or before July 17, 2014 is sufficient for compliance with this subpart.

(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 must be controlled according to either paragraph (c)(1) or (2) of this section.

(4) All emissions from any atmospheric vent from the gas treatment system are subject to the requirements of paragraph (b) or (c) of this section. For purposes of this subpart, atmospheric vents located on the condensate storage tank are not part of the treatment system and are exempt from the requirements of paragraph (b) or (c) of this section.

(d) *Design capacity*. For approval, a state plan must require 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 to submit an initial design capacity report to the Administrator as provided in §60.38f(a). The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. Any density conversions must be documented and submitted with the report. Submittal of the initial design capacity report fulfills the requirements of this subpart except as provided in paragraphs (d)(1) and (2) of this section.

(1) The owner or operator must submit an amended design capacity report as provided in §60.38f(b).

NOTE TO PARAGRAPH (d)(1): Note that if the design capacity increase is the result of a modification, as defined in this subpart, that was commenced after July 17, 2014, then the landfill becomes subject to subpart XXX of this part instead of this subpart. 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 this subpart, then the landfill remains subject to this subpart.

(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 and 2.5 million cubic meters, the owner or operator must comply with paragraph (e) of this section.

(e) *Emissions*. For approval, a state plan must require each owner or operator of an MSW landfill having a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters to either install a collection and control system as provided in paragraphs (b) and (c) of this section or calculate an initial NMOC emission rate for the landfill using the procedures specified in §60.35f(a). The NMOC emission rate must be recalculated annually, except as provided in §60.38f(c)(3).

(1) If the calculated NMOC emission rate is less than 34 megagrams per year, the owner or operator must:

(i) Submit an annual NMOC emission rate report according to §60.38f(c), except as provided in §60.38f(c)(3); and

(ii) Recalculate the NMOC emission rate annually using the procedures specified in §60.35f(a) until such time as the calculated NMOC emission rate is equal to or greater than 34 megagrams per year, or the landfill is closed.

(A) If the calculated NMOC emission rate, upon initial calculation or annual recalculation required in paragraph (e)(1)(ii) of this section, is equal to or greater than 34 megagrams per year, the owner or operator must either: Comply with paragraphs (b) and (c) of this section; calculate NMOC emissions using the next higher tier in §60.35f; or

conduct a surface emission monitoring demonstration using the procedures specified in § 60.35f(a)(6).

(B) If the landfill is permanently closed, a closure report must be submitted to the Administrator as provided in § 60.38f(f), except for exemption allowed under § 60.31f(e)(4).

(C) For the closed landfill subcategory, if the most recently calculated NMOC emission rate is equal to or greater than 50 megagrams per year, the owner or operator must either: Submit a gas collection and control system design plan as specified in § 60.38f(d), except for exemptions allowed under § 60.31f(e)(3), and install a collection and control system as provided in paragraphs (b) and (c) of this section; calculate NMOC emissions using the next higher tier in § 60.35f; or conduct a surface emission monitoring demonstration using the procedures specified in § 60.35f(a)(6).

(2) If the calculated NMOC emission rate is equal to or greater than 34 megagrams per year using Tier 1, 2, or 3 procedures, the owner or operator must either: submit a collection and control system design plan prepared by a professional engineer to the Administrator within 1 year as specified in § 60.38f(d), except for exemptions allowed under § 60.31f(e)(3); calculate NMOC emissions using a higher tier in § 60.35f; or conduct a surface emission monitoring demonstration using the procedures specified in § 60.35f(a)(6).

(3) For the closed landfill subcategory, if the calculated NMOC emission rate is equal to or greater than 50 megagrams per year using Tier 1, 2, or 3 procedures, the owner or operator must either: Submit a collection and control system design plan as specified in § 60.38f(d), except for exemptions allowed under § 60.31f(e)(3); calculate NMOC emissions using a higher tier in § 60.35f; or conduct a surface emission monitoring demonstration using the procedures specified in § 60.35f(a)(6).

(f) *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 § 60.41f). A closure report must be submitted to the Administrator as provided in § 60.38f(f).

(2) The collection and control system has been in operation a minimum of 15 years or the landfill owner or operator demonstrates that the GCCS will be unable to operate for 15 years due to declining gas flow.

(3) Following the procedures specified in § 60.35f(b), the calculated NMOC emission rate at the landfill is less than 34 megagrams per year on three successive test dates. The test dates must be no less than 90 days apart, and no more than 180 days apart.

(4) For the closed landfill subcategory (as defined in § 60.41), following the procedures specified in § 60.35f(b), the calculated NMOC emission rate at the landfill is less than 50 megagrams per year on three successive test dates. The test dates must be no less than 90 days apart, and no more than 180 days apart.

§ 60.34f Operational standards for collection and control systems.

For approval, a state plan must include provisions for the operational standards in this section (as well as the provisions in §§ 60.36f and 60.37f), or the operational standards in § 63.1958 of this chapter (as well as the provisions in §§ 63.1960 of this chapter and 63.1961 of this chapter), or both as alternative means of compliance, for an MSW landfill with a gas collection and control system used to comply with the provisions of § 60.33f(b) and (c). Once the owner or operator begins to comply with the provisions of § 63.1958 of this chapter, the owner or operator must continue to operate the collection and control device according to those provisions and cannot return to the provisions of this section. Each owner or operator of an MSW landfill with a gas collection and control system used to comply with the provisions of § 60.33f(b) and (c) must:

(a) Operate the collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for:

(1) Five (5) years or more if active; or

(2) Two (2) years or more if closed or at final grade.

(b) Operate the collection system with negative pressure at each wellhead except under the following conditions:

(1) A fire or increased well temperature. The owner or operator must record instances when positive pressure occurs in efforts to avoid a fire. These records must be submitted with the annual reports as provided in § 60.38f(h)(1).

(2) Use of a geomembrane or synthetic cover. The owner or operator must develop acceptable pressure limits in the design plan.

(3) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes must be approved by the Administrator as specified in § 60.38f(d).

(c) Operate each interior wellhead in the collection system with a landfill gas temperature less than 55 degrees Celsius (131 degrees Fahrenheit). The owner or operator may establish a higher operating temperature value at a particular well. A higher operating value demonstration must be submitted to the Administrator for approval and must include supporting data demonstrating that the elevated parameter neither causes fires nor significantly inhibits anaerobic decomposition by killing methanogens. The demonstration must satisfy both criteria in order to be approved (*i.e.*, neither causing fires nor killing methanogens is acceptable).

(d) Operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator must conduct surface testing using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in § 60.36(d). The owner or operator must conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at no more than 30-meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover and all cover penetrations. Thus, the owner or operator must monitor any openings that are within an area of the landfill where waste has been placed and a gas collection system is required. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan must be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30-meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing.

(e) Operate the system such that all collected gases are vented to a control system designed and operated in compliance with § 60.33f(c). In the event the collection or control system is not operating, the gas mover system must be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere must be closed within 1 hour of the collection or control system not operating.

(f) Operate the control system at all times when the collected gas is routed to the system.

(g) If monitoring demonstrates that the operational requirements in paragraph (b), (c), or (d) of this section are not met, corrective action must be taken as specified in § 60.36f(a)(3) and (5) or (c). If corrective actions are taken as specified in § 60.36f, the monitored exceedance is not a violation of the operational requirements in this section.

[81 FR 59313, Aug. 29, 2016, as amended at 85 FR 17259, Mar. 26, 2020]

§ 60.35f Test methods and procedures.

For approval, a state plan must include provisions in this section to calculate the landfill NMOC emission rate or to conduct a surface emission monitoring demonstration.

(a)(1) *NMOC Emission Rate.* The landfill owner or operator must calculate the NMOC emission rate using either Equation 1 provided in paragraph (a)(1)(i) of this section or Equation 2 provided in paragraph (a)(1)(ii) of this section. Both Equation 1 and Equation 2 may be used if the actual year-to-year solid waste acceptance rate is known, as specified in paragraph (a)(1)(i) of this section, for part of the life of the landfill and the actual year-

to-year solid waste acceptance rate is unknown, as specified in paragraph (a)(1)(ii) of this section, for part of the life of the landfill. The values to be used in both Equation 1 and Equation 2 are 0.05 per year for k, 170 cubic meters per megagram for Lo, and 4,000 parts per million by volume as hexane for the C_{NMOC}. For landfills located in geographical areas with a 30-year annual average precipitation of less than 25 inches, as measured at the nearest representative official meteorologic site, the k value to be used is 0.02 per year.

(i)(A) Equation 1 must be used if the actual year-to-year solid waste acceptance rate is known.

$$M_{NMOC} = \sum_{i=1}^{n} 2\,k\,L_o M_i (e^{-kt_i})(C_{NMOC})(3.6\,x\,10^{-9}) \qquad \text{(Eq. 1)}$$

Where:

M_{NMOC} = Total NMOC emission rate from the landfill, megagrams per year.
k = Methane generation rate constant, $year^{-1}$.
L_o = Methane generation potential, cubic meters per megagram solid waste.
M_i = Mass of solid waste in the i^{th} section, megagrams.
t_i = Age of the i^{th} section, years.
C_{NMOC} = Concentration of NMOC, parts per million by volume as hexane.
3.6×10^{-9} = Conversion factor.

(B) The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for M_i if documentation of the nature and amount of such wastes is maintained.

(ii)(A) Equation 2 must be used if the actual year-to-year solid waste acceptance rate is unknown.

$$M_{NMOC} = 2L_O R\,(e^{-kc} - e^{-kt})\,C_{NMOC}(3.6 \times 10^{-9}) \qquad \text{(Eq. 2)}$$

Where:

M_{NMOC} = Mass emission rate of NMOC, megagrams per year.
L_o = Methane generation potential, cubic meters per megagram solid waste.
R = Average annual acceptance rate, megagrams per year.
k = Methane generation rate constant, $year^{-1}$.
t = Age of landfill, years.
C_{NMOC} = Concentration of NMOC, parts per million by volume as hexane.
c = Time since closure, years; for an active landfill c = 0 and $e^{-kc} = 1$.
3.6×10^{-9} = Conversion factor.

(B) The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value of R, if documentation of the nature and amount of such wastes is maintained.

(2) *Tier 1.* The owner or operator must compare the calculated NMOC mass emission rate to the standard of 34 megagrams per year.

(i) If the NMOC emission rate calculated in paragraph (a)(1) of this section is less than 34 megagrams per year, then the owner or operator must submit an NMOC emission rate report according to § 60.38f(c), and must recalculate the NMOC mass emission rate annually as required under § 60.33f(e).

(ii) If the NMOC emission rate calculated in paragraph (a)(1) of this section is equal to or greater than 34 megagrams per year, then the landfill owner or operator must either:

(A) Submit a gas collection and control system design plan within 1 year as specified in § 60.38f(d) and install and operate a gas collection and control system within 30 months according to § 60.33f(b) and (c);

(B) Determine a site-specific NMOC concentration and recalculate the NMOC emission rate using the Tier 2 procedures provided in paragraph (a)(3) of this section; or

(C) Determine a site-specific methane generation rate constant and recalculate the NMOC emission rate using the Tier 3 procedures provided in paragraph (a)(4) of this section.

(3) *Tier 2.* The landfill owner or operator must determine the site-specific NMOC concentration using the following sampling procedure. The landfill owner or operator must install at least two sample probes per hectare, evenly distributed over the landfill surface that has retained waste for at least 2 years. If the landfill is larger than 25 hectares in area, only 50 samples are required. The probes should be evenly distributed across the sample area. The sample probes should be located to avoid known areas of nondegradable solid waste. The owner or operator must collect and analyze one sample of landfill gas from each probe to determine the NMOC concentration using Method 25 or 25C of appendix A of this part. Taking composite samples from different probes into a single cylinder is allowed; however, equal sample volumes must be taken from each probe. For each composite, the sampling rate, collection times, beginning and ending cylinder vacuums, or alternative volume measurements must be recorded to verify that composite volumes are equal. Composite sample volumes should not be less than one liter unless evidence can be provided to substantiate the accuracy of smaller volumes. Terminate compositing before the cylinder approaches ambient pressure where measurement accuracy diminishes. If more than the required number of samples is taken, all samples must be used in the analysis. The landfill owner or operator must divide the NMOC concentration from Method 25 or 25C by six to convert from C_{NMOC} as carbon to C_{NMOC} as hexane. If the landfill has an active or passive gas removal system in place, Method 25 or 25C samples may be collected from these systems instead of surface probes provided the removal system can be shown to provide sampling as representative as the two sampling probe per hectare requirement. For active collection systems, samples may be collected from the common header pipe. The sample location on the common header pipe must be before any gas moving, condensate removal, or treatment system equipment. For active collection systems, a minimum of three samples must be collected from the header pipe.

(i) Within 60 days after the date of determining the NMOC concentration and corresponding NMOC emission rate, the owner or operator must submit the results according to § 60.38f(j)(2).

(ii) The landfill owner or operator must recalculate the NMOC mass emission rate using Equation 1 or Equation 2 provided in paragraph (a)(1)(i) or (ii) of this section using the average site-specific NMOC concentration from the collected samples instead of the default value provided in paragraph (a)(1) of this section.

(iii) If the resulting NMOC mass emission rate is less than 34 megagrams per year, then the owner or operator must submit a periodic estimate of NMOC emissions in an NMOC emission rate report according to § 60.38f(c), and must recalculate the NMOC mass emission rate annually as required under § 60.33f(e). The site-specific NMOC concentration must be retested every 5 years using the methods specified in this section.

(iv) If the NMOC mass emission rate as calculated using the Tier 2 site-specific NMOC concentration is equal to or greater than 34 megagrams per year, the owner or operator must either:

(A) Submit a gas collection and control system design plan within 1 year as specified in § 60.38f(d) and install and operate a gas collection and control system within 30 months according to § 60.33f(b) and (c);

(B) Determine a site-specific methane generation rate constant and recalculate the NMOC emission rate using the site-specific methane generation rate using the Tier 3 procedures specified in paragraph (a)(4) of this section; or

(C) Conduct a surface emission monitoring demonstration using the Tier 4 procedures specified in paragraph (a)(6) of this section.

(4) *Tier 3.* The site-specific methane generation rate constant must be determined using the procedures provided in Method 2E of appendix A of this part. The landfill owner or operator must estimate the NMOC mass emission rate using Equation 1 or Equation 2 in paragraph (a)(1)(i) or (ii) of this section and using a site-specific methane generation rate constant, and the

site-specific NMOC concentration as determined in paragraph (a)(3) of this section instead of the default values provided in paragraph (a)(1) of this section. The landfill owner or operator must compare the resulting NMOC mass emission rate to the standard of 34 megagrams per year.

(i) If the NMOC mass emission rate as calculated using the Tier 2 site-specific NMOC concentration and Tier 3 site-specific methane generation rate is equal to or greater than 34 megagrams per year, the owner or operator must either:

(A) Submit a gas collection and control system design plan within 1 year as specified in § 60.38f(d) and install and operate a gas collection and control system within 30 months according to § 60.33f(b) and (c); or

(B) Conduct a surface emission monitoring demonstration using the Tier 4 procedures specified in paragraph (a)(6) of this section.

(ii) If the NMOC mass emission rate is less than 34 megagrams per year, then the owner or operator must recalculate the NMOC mass emission rate annually using Equation 1 or Equation 2 in paragraph (a)(1) of this section and using the site-specific Tier 2 NMOC concentration and Tier 3 methane generation rate constant and submit a periodic NMOC emission rate report as provided in § 60.38f(c). The calculation of the methane generation rate constant is performed only once, and the value obtained from this test must be used in all subsequent annual NMOC emission rate calculations.

(5) *Other methods.* The owner or operator may use other methods to determine the NMOC concentration or a site-specific methane generation rate constant as an alternative to the methods required in paragraphs (a)(3) and (4) of this section if the method has been approved by the Administrator.

(6) *Tier 4.* The landfill owner or operator must demonstrate that surface methane emissions are below 500 parts per million. Surface emission monitoring must be conducted on a quarterly basis using the following procedures. Tier 4 is allowed only if the landfill owner or operator can demonstrate that NMOC emissions are greater than or equal to 34 Mg/yr but less than 50 Mg/yr using Tier 1 or Tier 2. If both Tier 1 and Tier 2 indicate NMOC emissions are 50 Mg/yr or greater, then Tier 4 cannot be used. In addition, the landfill must meet the criteria in paragraph (a)(6)(viii) of this section.

(i) The owner or operator must measure surface concentrations of methane along the entire perimeter of the landfill and along a pattern that traverses the landfill at no more than 30-meter intervals using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in § 60.36f(d).

(ii) The background concentration must be determined by moving the probe inlet upwind and downwind at least 30 meters from the waste mass boundary of the landfill.

(iii) Surface emission monitoring must be performed in accordance with section 8.3.1 of Method 21 of appendix A of this part, except that the probe inlet must be placed no more than 5 centimeters above the landfill surface; the constant measurement of distance above the surface should be based on a mechanical device such as with a wheel on a pole.

(A) The owner or operator must use a wind barrier, similar to a funnel, when onsite average wind speed exceeds 4 miles per hour or 2 meters per second or gust exceeding 10 miles per hour. Average on-site wind speed must also be determined in an open area at 5-minute intervals using an on-site anemometer with a continuous recorder and data logger for the entire duration of the monitoring event. The wind barrier must surround the SEM monitor, and must be placed on the ground, to ensure wind turbulence is blocked. SEM cannot be conducted if average wind speed exceeds 25 miles per hour.

(B) Landfill surface areas where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover, and all cover penetrations must also be monitored using a device meeting the specifications provided in § 60.36f(d).

(iv) Each owner or operator seeking to comply with the Tier 4 provisions in paragraph (a)(6) of this section must maintain records of surface emission

monitoring as provided in § 60.39f(g) and submit a Tier 4 surface emissions report as provided in § 60.38f(d)(4)(iii).

(v) If there is any measured concentration of methane of 500 parts per million or greater from the surface of the landfill, the owner or operator must submit a gas collection and control system design plan within 1 year of the first measured concentration of methane of 500 parts per million or greater from the surface of the landfill according to § 60.38f(d) and install and operate a gas collection and control system according to § 60.33f(b) and (c) within 30 months of the most recent NMOC emission rate report in which the NMOC emission rate equals or exceeds 34 megagrams per year based on Tier 2.

(vi) If after four consecutive quarterly monitoring periods at a landfill, other than a closed landfill, there is no measured concentration of methane of 500 parts per million or greater from the surface of the landfill, the owner or operator must continue quarterly surface emission monitoring using the methods specified in this section.

(vii) If after four consecutive quarterly monitoring periods at a closed landfill there is no measured concentration of methane of 500 parts per million or greater from the surface of the landfill, the owner or operator must conduct annual surface emission monitoring using the methods specified in this section.

(viii) If a landfill has installed and operates a collection and control system that is not required by this subpart, then the collection and control system must meet the following criteria:

(A) The gas collection and control system must have operated for at least 6,570 out of 8,760 hours preceding the Tier 4 surface emissions monitoring demonstration.

(B) During the Tier 4 surface emissions monitoring demonstration, the gas collection and control system must operate as it normally would to collect and control as much landfill gas as possible.

(b) After the installation and startup of a collection and control system in compliance with this subpart, the owner or operator must calculate the NMOC emission rate for purposes of determining when the system can be capped, removed, or decommissioned as provided in § 60.33f(f), using Equation 3:

$$M_{NMOC} = 1.89 \times 10^{-3} Q_{LFG} C_{NMOC} \qquad \text{(Eq. 3)}$$

Where:

M_{NMOC} = Mass emission rate of NMOC, megagrams per year.

Q_{LFG} = Flow rate of landfill gas, cubic meters per minute.

C_{NMOC} = NMOC concentration, parts per million by volume as hexane.

(1) The flow rate of landfill gas, Q_{LFG}, must be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the control system using a gas flow measuring device calibrated according to the provisions of section 10 of Method 2E of appendix A of this part.

(2) The average NMOC concentration, C_{NMOC}, must be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in Method 25 or Method 25C of appendix A of this part. The sample location on the common header pipe must be before any condensate removal or other gas refining units. The landfill owner or operator must divide the NMOC concentration from Method 25 or Method 25C by six to convert from C_{NMOC} as carbon to C_{NMOC} as hexane.

(3) The owner or operator may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Administrator.

(i) Within 60 days after the date of calculating the NMOC emission rate for purposes of determining when the system can be capped or removed, the owner or operator must submit the results according to § 60.38f(j)(2).

(ii) [Reserved]

(c) When calculating emissions for Prevention of Significant Deterioration purposes, the owner or operator of each MSW landfill subject to the provisions of this subpart must estimate the NMOC emission rate for comparison to the Prevention of Significant Deterioration major source and significance levels in § 51.166 or § 52.21 of this chapter using Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources (AP–42) or other approved measurement procedures.

(d) For the performance test required in § 60.33f(c)(1), the net heating value of the combusted landfill gas as determined in § 60.18(f)(3) is calculated from the concentration of methane in the landfill gas as measured by Method 3C. A minimum of three 30-minute Method 3C samples are determined. The measurement of other organic components, hydrogen, and carbon monoxide is not applicable. Method 3C may be used to determine the landfill gas molecular weight for calculating the flare gas exit velocity under § 60.18(f)(4).

(1) Within 60 days after the date of completing each performance test (as defined in § 60.8), the owner or operator must submit the results of the performance tests required by paragraph (b) or (d) of this section, including any associated fuel analyses, according to § 60.38f(j)(1).

(2) [Reserved]

(e) For the performance test required in § 60.33f(c)(2), Method 25 or 25C (Method 25C may be used at the inlet only) of appendix A of this part must be used to determine compliance with the 98 weight-percent efficiency or the 20 parts per million by volume outlet NMOC concentration level, unless another method to demonstrate compliance has been approved by the Administrator as provided by § 60.38f(d)(2). Method 3, 3A, or 3C must be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. Method 18 may be used in conjunction with Method 25A on a limited basis (compound specific, *e.g.*, methane) or Method 3C may be used to determine methane. The methane as carbon should be subtracted from the Method 25A total hydrocarbon value as carbon to give NMOC concentration as carbon. The landfill owner or operator must divide the NMOC concentration as carbon by 6 to convert the C_{NMOC} as carbon to C_{NMOC} as hexane. Equation 4 must be used to calculate efficiency:

$$\text{Control Efficiency} = (NMOC_{in} - NMOC_{out})/(NMOC_{in}) \qquad \text{(Eq. 4)}$$

Where:

$NMOC_{in}$ = Mass of NMOC entering control device.

$NMOC_{out}$ = Mass of NMOC exiting control device.

(1) Within 60 days after the date of completing each performance test (as defined in § 60.8), the owner or operator must submit the results of the performance tests, including any associated fuel analyses, according to § 60.38f(j)(1).

(2) [Reserved]

§ 60.36f Compliance provisions.

For approval, a state plan must include the compliance provisions in this section (as well as the provisions in §§ 60.34f and 60.37f), or the compliance provisions in § 63.1960 of this chapter (as well as the provisions in §§ 63.1958 of this chapter and 63.1961 of this chapter), or both as alternative means of compliance, for an MSW landfill with a gas collection and control system used to comply with the provisions of § 60.33f(b) and (c). Once the owner or operator begins to comply with the provisions of § 63.1960 of this chapter, the owner or operator must continue to operate the collection and control device according to those provisions and cannot return to the provisions of this section.

(a) Except as provided in § 60.38f(d)(2), the specified methods in paragraphs (a)(1) through (6) of this section must be used to determine whether the gas

collection system is in compliance with § 60.33f(b)(2).

(1) For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with § 60.33f(b)(2)(i), either Equation 5 or Equation 6 in paragraph (a)(1)(i) or (ii) of this section must be used. The methane generation rate constant (k) and methane generation potential (L_o) kinetic factors should be those published in the most recent AP–42 or other site-specific values demonstrated to be appropriate and approved by the Administrator. If k has been determined as specified in § 60.35f(a)(4), the value of k determined from the test must be used. A value of no more than 15 years must be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

(i) For sites with unknown year-to-year solid waste acceptance rate:

$$Q_m = 2L_oR\ (e^{-kc} - e^{-kt}) \qquad \text{(Eq. 5)}$$

Where:

Q_m = Maximum expected gas generation flow rate, cubic meters per year.
L_o = Methane generation potential, cubic meters per megagram solid waste.
R = Average annual acceptance rate, megagrams per year.
k = Methane generation rate constant, $year^{-1}$.
t = Age of the landfill at equipment installation plus the time the owner or operator intends to use the gas mover equipment or active life of the landfill, whichever is less. If the equipment is installed after closure, t is the age of the landfill at installation, years.
c = Time since closure, years (for an active landfill c = 0 and $e^{-kc} = 1$).

(ii) For sites with known year-to-year solid waste acceptance rate:

$$Q_M = \sum_{i=1}^{n} 2kL_oM_i(e^{-kt_i}) \qquad \text{(Eq. 6)}$$

Where:

Q_M = Maximum expected gas generation flow rate, cubic meters per year.
k = Methane generation rate constant, $year^{-1}$.
L_o = Methane generation potential, cubic meters per megagram solid waste.
M_i = Mass of solid waste in the i^{th} section, megagrams.
t_i = Age of the i^{th} section, years.

(iii) If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, Equation 5 or Equation 6 in paragraph (a)(1)(i) or (ii) of this section. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using Equation 5 or Equation 6 or other methods must be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment.

(2) For the purposes of determining sufficient density of gas collectors for compliance with § 60.33f(b)(2)(ii), the owner or operator must design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Administrator, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.

(3) For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with § 60.33f(b)(2)(iii), the owner or operator must measure gauge pressure in the gas collection header applied to

each individual well monthly. If a positive pressure exists, action must be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under §60.34f(b). Any attempted corrective measure must not cause exceedances of other operational or performance standards.

(i) If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement of positive pressure, the owner or operator must conduct a root cause analysis and correct the exceedance as soon as practicable, but not later than 60 days after positive pressure was first measured. The owner or operator must keep records according to §60.39f(e)(3).

(ii) If corrective actions cannot be fully implemented within 60 days following the positive pressure or elevated temperature measurement for which the root cause analysis was required, the owner or operator must also conduct a corrective action analysis and develop an implementation schedule to complete the corrective action(s) as soon as practicable, but no more than 120 days following the measurement of landfill gas temperature greater than 55 degrees Celsius (131 degrees Fahrenheit) or positive pressure. The owner or operator must submit the items listed in §60.38f(h)(7) as part of the next annual report. The owner or operator must keep records according to §60.39f(e)(4).

(iii) If corrective action is expected to take longer than 120 days to complete after the initial exceedance, the owner or operator must submit the root cause analysis, corrective action analysis, and corresponding implementation timeline to the Administrator, according to §60.38f(h)(7) and (k). The owner or operator must keep records according to §60.39f(e)(5).

(4) [Reserved]

(5) For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator must monitor each well monthly for temperature as provided in §60.34f(c). If a well exceeds the operating parameter for temperature, action must be initiated to correct the exceedance within 5 calendar days. Any attempted corrective measure must not cause exceedances of other operational or performance standards.

(i) If a landfill gas temperature less than 55 degrees Celsius (131 degrees Fahrenheit) cannot be achieved within 15 calendar days of the first measurement of landfill gas temperature greater than 55 degrees Celsius (131 degrees Fahrenheit), the owner or operator must conduct a root cause analysis and correct the exceedance as soon as practicable, but no later than 60 days after a landfill gas temperature greater than 55 degrees Celsius (131 degrees Fahrenheit) was first measured. The owner or operator must keep records according to §60.39f(e)(3).

(ii) If corrective actions cannot be fully implemented within 60 days following the positive pressure measurement for which the root cause analysis was required, the owner or operator must also conduct a corrective action analysis and develop an implementation schedule to complete the corrective action(s) as soon as practicable, but no more than 120 days following the measurement of landfill gas temperature greater than 55 degrees Celsius (131 degrees Fahrenheit). The owner or operator must submit the items listed in §60.38f(h)(7) as part of the next annual report. The owner or operator must keep records according to §60.39f(e)(4).

(iii) If corrective action is expected to take longer than 120 days to complete after the initial exceedance, the owner or operator must submit the root cause analysis, corrective action analysis, and corresponding implementation timeline to the Administrator, according to §60.38f(h)(7) and (k). The owner or operator must keep records according to §60.39f(e)(5).

(6) An owner or operator seeking to demonstrate compliance with §60.33f(b)(2)(iv) through the use of a collection system not conforming to the specifications provided in §60.40f must provide information satisfactory to the Administrator as specified in §60.38f(d)(3) demonstrating that off-site migration is being controlled.

(b) For purposes of compliance with §60.34f(a), each owner or operator of a controlled landfill must place each well or design component as specified in the approved design plan as provided in

§ 60.38f(d). Each well must be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of:

(1) Five (5) years or more if active; or

(2) Two (2) years or more if closed or at final grade.

(c) The following procedures must be used for compliance with the surface methane operational standard as provided in § 60.34f(d):

(1) After installation and startup of the gas collection system, the owner or operator must monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at no more than 30-meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in paragraph (d) of this section.

(2) The background concentration must be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.

(3) Surface emission monitoring must be performed in accordance with section 8.3.1 of Method 21 of appendix A of this part, except that the probe inlet must be placed within 5 to 10 centimeters of the ground. Monitoring must be performed during typical meteorological conditions.

(4) Any reading of 500 parts per million or more above background at any location must be recorded as a monitored exceedance and the actions specified in paragraphs (c)(4)(i) through (v) of this section must be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of § 60.34f(d).

(i) The location of each monitored exceedance must be marked and the location and concentration recorded. For location, you must determine the latitude and longitude coordinates using an instrument with an accuracy of at least 4 meters. The coordinates must be in decimal degrees with at least five decimal places.

(ii) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance must be made and the location must be re-monitored within 10 calendar days of detecting the exceedance.

(iii) If the re-monitoring of the location shows a second exceedance, additional corrective action must be taken and the location must be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in paragraph (c)(4)(v) of this section must be taken, and no further monitoring of that location is required until the action specified in paragraph (c)(4)(v) of this section has been taken.

(iv) Any location that initially showed an exceedance but has a methane concentration less than 500 parts per million methane above background at the 10-day re-monitoring specified in paragraph (c)(4)(ii) or (iii) of this section must be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month re-monitoring shows an exceedance, the actions specified in paragraph (c)(4)(iii) or (v) of this section must be taken.

(v) For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device must be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Administrator for approval.

(5) The owner or operator must implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.

(d) Each owner or operator seeking to comply with the provisions in paragraph (c) of this section or § 60.35f(a)(6)

must comply with the following instrumentation specifications and procedures for surface emission monitoring devices:

(1) The portable analyzer must meet the instrument specifications provided in section 6 of Method 21 of appendix A of this part, except that ''methane'' replaces all references to ''VOC''.

(2) The calibration gas must be methane, diluted to a nominal concentration of 500 parts per million in air.

(3) To meet the performance evaluation requirements in section 8.1 of Method 21 of appendix A of this part, the instrument evaluation procedures of section 8.1 of Method 21 must be used.

(4) The calibration procedures provided in sections 8 and 10 of Method 21 of appendix A of this part must be followed immediately before commencing a surface monitoring survey.

(e) The provisions of this subpart apply at all times, including periods of startup, shutdown, or malfunction. During periods of startup, shutdown, and malfunction, you must comply with the work practice specified in § 60.34f(e) in lieu of the compliance provisions in § 60.36f.

[81 FR 59313, Aug. 29, 2016, as amended at 85 FR 17259, Mar. 26, 2020]

§ 60.37f Monitoring of operations.

For approval, a state plan must include the monitoring provisions in this section, (as well as the provisions in §§ 60.34f and 60.36f) except as provided in § 60.38f(d)(2), or the monitoring provisions in § 63.1961 of this chapter (as well as the provisions in §§ 63.1958 of this chapter and 63.1960 of this chapter), or both as alternative means of compliance, for an MSW landfill with a gas collection and control system used to comply with the provisions of § 60.33f(b) and (c). Once the owner or operator begins to comply with the provisions of § 63.1961 of this chapter, the owner or operator must continue to operate the collection and control device according to those provisions and cannot return to the provisions of this section.

(a) Each owner or operator seeking to comply with § 60.33f(b)(2) for an active gas collection system must install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead and:

(1) Measure the gauge pressure in the gas collection header on a monthly basis as provided in § 60.36f(a)(3); and

(2) Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as follows:

(i) The nitrogen level must be determined using Method 3C, unless an alternative test method is established as allowed by § 60.38f(d)(2).

(ii) Unless an alternative test method is established as allowed by § 60.38f(d)(2), the oxygen level must be determined by an oxygen meter using Method 3A, 3C, or ASTM D6522–11 (incorporated by reference, see § 60.17). Determine the oxygen level by an oxygen meter using Method 3A, 3C, or ASTM D6522–11 (if sample location is prior to combustion) except that:

(A) The span must be set between 10 and 12 percent oxygen;

(B) A data recorder is not required;

(C) Only two calibration gases are required, a zero and span;

(D) A calibration error check is not required; and

(E) The allowable sample bias, zero drift, and calibration drift are ±10 percent.

(iii) A portable gas composition analyzer may be used to monitor the oxygen levels provided:

(A) The analyzer is calibrated; and

(B) The analyzer meets all quality assurance and quality control requirements for Method 3A or ASTM D6522–11 (incorporated by reference, see § 60.17).

(3) Monitor temperature of the landfill gas on a monthly basis as provided in § 60.36f(a)(5). The temperature measuring device must be calibrated annually using the procedure in this part 60, appendix A–1, Method 2, Section 10.3.

(b) Each owner or operator seeking to comply with § 60.33f(c) using an enclosed combustor must calibrate, maintain, and operate according to the manufacturer's specifications, the following equipment:

(1) A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 degrees Celsius, whichever is greater. A temperature monitoring device is

not required for boilers or process heaters with design heat input capacity equal to or greater than 44 megawatts.

(2) A device that records flow to the control device and bypass of the control device (if applicable). The owner or operator must:

(i) Install, calibrate, and maintain a gas flow rate measuring device that must record the flow to the control device at least every 15 minutes; and

(ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism must be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

(c) Each owner or operator seeking to comply with §60.33f(c) using a non-enclosed flare must install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:

(1) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.

(2) A device that records flow to the flare and bypass of the flare (if applicable). The owner or operator must:

(i) Install, calibrate, and maintain a gas flow rate measuring device that records the flow to the control device at least every 15 minutes; and

(ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism must be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

(d) Each owner or operator seeking to demonstrate compliance with §60.33f(c) using a device other than a non-enclosed flare or an enclosed combustor or a treatment system must provide information satisfactory to the Administrator as provided in §60.38f(d)(2) describing the operation of the control device, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Administrator must review the information and either approve it, or request that additional information be submitted. The Administrator may specify additional appropriate monitoring procedures.

(e) Each owner or operator seeking to install a collection system that does not meet the specifications in §60.40f or seeking to monitor alternative parameters to those required by §§60.34f through 60.37f must provide information satisfactory to the Administrator as provided in §60.38f(d)(2) and (3) describing the design and operation of the collection system, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Administrator may specify additional appropriate monitoring procedures.

(f) Each owner or operator seeking to demonstrate compliance with the 500 parts per million surface methane operational standard in §60.34f(d) must monitor surface concentrations of methane according to the procedures provided in §60.36f(c) and the instrument specifications in §60.36f(d). Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 parts per million or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.

(g) Each owner or operator seeking to demonstrate compliance with the control system requirements in §60.33f(c) using a landfill gas treatment system must maintain and operate all monitoring systems associated with the treatment system in accordance with the site-specific treatment system monitoring plan required in §60.39f(b)(5)(ii) and must calibrate, maintain, and operate according to the manufacturer's specifications a device that records flow to the treatment system and bypass of the treatment system (if applicable). The owner or operator must:

(1) Install, calibrate, and maintain a gas flow rate measuring device that records the flow to the treatment system at least every 15 minutes; and

(2) Secure the bypass line valve in the closed position with a car-seal or a

lock-and-key type configuration. A visual inspection of the seal or closure mechanism must be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

(h) The monitoring requirements of paragraphs (b), (c) (d) and (g) of this section apply at all times the affected source is operating, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to complete monitoring system repairs in response to monitoring system malfunctions and to return the monitoring system to operation as expeditiously as practicable.

[81 FR 59313, Aug. 29, 2016, as amended at 85 FR 17260, Mar. 26, 2020]

§ 60.38f Reporting guidelines.

For approval, a state plan must include the reporting provisions listed in this section, as applicable, except as provided under §§ 60.24 and 60.38f(d)(2).

(a) *Design capacity report.* For existing MSW landfills subject to this subpart, the initial design capacity report must be submitted no later than 90 days after the effective date of EPA approval of the state's plan under section 111(d) of the Clean Air Act. The initial design capacity report must contain the following information:

(1) A map or plot of the landfill, providing the size and location of the landfill, and identifying all areas where solid waste may be landfilled according to the permit issued by the state, local, or tribal agency responsible for regulating the landfill.

(2) The maximum design capacity of the landfill. Where the maximum design capacity is specified in the permit issued by the state, local, or tribal agency responsible for regulating the landfill, a copy of the permit specifying the maximum design capacity may be submitted as part of the report. If the maximum design capacity of the landfill is not specified in the permit, the maximum design capacity must be calculated using good engineering practices. The calculations must be provided, along with the relevant parameters as part of the report. The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. If the owner or operator chooses to convert the design capacity from volume to mass or from mass to volume to demonstrate its design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, the calculation must include a site-specific density, which must be recalculated annually. Any density conversions must be documented and submitted with the design capacity report. The state, local, or tribal agency or the Administrator may request other reasonable information as may be necessary to verify the maximum design capacity of the landfill.

(b) *Amended design capacity report.* An amended design capacity report must be submitted providing notification of an increase in the design capacity of the landfill, within 90 days of an increase in the maximum design capacity of the landfill to meet or exceed 2.5 million megagrams and 2.5 million cubic meters. This increase in design capacity may result from an increase in the permitted volume of the landfill or an increase in the density as documented in the annual recalculation required in § 60.39f(f).

(c) *NMOC emission rate report.* For existing MSW landfills covered by this subpart with a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, the NMOC emission rate report must be submitted following the procedure specified in paragraph (j)(2) of this section no later than 90 days after the effective date of EPA approval of the state's plan under section 111(d) of the Clean Air Act. The NMOC emission rate report must be submitted to the Administrator annually following the procedure specified in paragraph (j)(2) of this section, except as provided for in paragraph (c)(3) of this section. The Administrator may request such additional information as

may be necessary to verify the reported NMOC emission rate.

(1) The NMOC emission rate report must contain an annual or 5-year estimate of the NMOC emission rate calculated using the formula and procedures provided in § 60.35f(a) or (b), as applicable.

(2) The NMOC emission rate report must include all the data, calculations, sample reports and measurements used to estimate the annual or 5-year emissions.

(3) If the estimated NMOC emission rate as reported in the annual report to the Administrator is less than 34 megagrams per year in each of the next 5 consecutive years, the owner or operator may elect to submit, following the procedure specified in paragraph (j)(2) of this section, an estimate of the NMOC emission rate for the next 5-year period in lieu of the annual report. This estimate must include the current amount of solid waste-in-place and the estimated waste acceptance rate for each year of the 5 years for which an NMOC emission rate is estimated. All data and calculations upon which this estimate is based must be provided to the Administrator. This estimate must be revised at least once every 5 years. If the actual waste acceptance rate exceeds the estimated waste acceptance rate in any year reported in the 5-year estimate, a revised 5-year estimate must be submitted to the Administrator. The revised estimate must cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate.

(4) Each owner or operator subject to the requirements of this subpart is exempted from the requirements to submit an NMOC emission rate report, after installing a collection and control system that complies with § 60.33f(b) and (c), during such time as the collection and control system is in operation and in compliance with §§ 60.34f and 60.36f.

(d) *Collection and control system design plan.* The state plan must include a process for state review and approval of the site-specific design plan for each gas collection and control system. The collection and control system design plan must be prepared and approved by a professional engineer and must meet the following requirements:

(1) The collection and control system as described in the design plan must meet the design requirements in § 60.33f(b) and (c).

(2) The collection and control system design plan must include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping, or reporting provisions of §§ 60.34f through 60.39f proposed by the owner or operator.

(3) The collection and control system design plan must either conform to specifications for active collection systems in § 60.40f or include a demonstration to the Administrator's satisfaction of the sufficiency of the alternative provisions to § 60.40f.

(4) Each owner or operator of an MSW landfill having a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters must submit a copy of the collection and control system design plan cover page that contains the engineer's seal to the Administrator within 1 year of the first NMOC emission rate report in which the NMOC emission rate equals or exceeds 34 megagrams per year, except as follows:

(i) If the owner or operator elects to recalculate the NMOC emission rate after Tier 2 NMOC sampling and analysis as provided in § 60.35f(a)(3) and the resulting rate is less than 34 megagrams per year, annual periodic reporting must be resumed, using the Tier 2 determined site-specific NMOC concentration, until the calculated NMOC emission rate is equal to or greater than 34 megagrams per year or the landfill is closed. The revised NMOC emission rate report, with the recalculated NMOC emission rate based on NMOC sampling and analysis, must be submitted, following the procedures in paragraph (j)(2) of this section, within 180 days of the first calculated exceedance of 34 megagrams per year.

(ii) If the owner or operator elects to recalculate the NMOC emission rate after determining a site-specific methane generation rate constant k, as provided in Tier 3 in § 60.35f(a)(4), and the resulting NMOC emission rate is less than 34 megagrams per year, annual

periodic reporting must be resumed. The resulting site-specific methane generation rate constant k must be used in the NMOC emission rate calculation until such time as the emissions rate calculation results in an exceedance. The revised NMOC emission rate report based on the provisions of §60.35f(a)(4) and the resulting site-specific methane generation rate constant k must be submitted, following the procedure specified in paragraph (j)(2) of this section, to the Administrator within 1 year of the first calculated NMOC emission rate equaling or exceeding 34 megagrams per year.

(iii) If the owner or operator elects to demonstrate that site-specific surface methane emissions are below 500 parts per million methane, based on the provisions of §60.35f(a)(6), then the owner or operator must submit annually a Tier 4 surface emissions report as specified in this paragraph (d)(4)(iii) following the procedure specified in paragraph (j)(2) of this section until a surface emissions readings of 500 parts per million methane or greater is found. If the Tier 4 surface emissions report shows no surface emissions readings of 500 parts per million methane or greater for four consecutive quarters at a closed landfill, then the landfill owner or operator may reduce Tier 4 monitoring from a quarterly to an annual frequency. The Administrator may request such additional information as may be necessary to verify the reported instantaneous surface emission readings. The Tier 4 surface emissions report must clearly identify the location, date and time (to the nearest second), average wind speeds including wind gusts, and reading (in parts per million) of any value 500 parts per million methane or greater, other than non-repeatable, momentary readings. For location, you must determine the latitude and longitude coordinates using an instrument with an accuracy of at least 4 meters. The coordinates must be in decimal degrees with at least five decimal places. The Tier 4 surface emission report should also include the results of the most recent Tier 1 and Tier 2 results in order to verify that the landfill does not exceed 50 Mg/yr of NMOC.

(A) The initial Tier 4 surface emissions report must be submitted annually, starting within 30 days of completing the fourth quarter of Tier 4 surface emissions monitoring that demonstrates that site-specific surface methane emissions are below 500 parts per million methane, and following the procedure specified in paragraph (j)(2) of this section.

(B) The Tier 4 surface emissions rate report must be submitted within 1 year of the first measured surface exceedance of 500 parts per million methane, following the procedure specified in paragraph (j)(2) of this section.

(iv) If the landfill is in the closed landfill subcategory, the owner or operator must submit a collection and control system design plan to the Administrator within 1 year of the first NMOC emission rate report in which the NMOC emission rate equals or exceeds 50 megagrams per year, except as follows:

(A) If the owner or operator elects to recalculate the NMOC emission rate after Tier 2 NMOC sampling and analysis as provided in §60.35f(a)(3) and the resulting rate is less than 50 megagrams per year, annual periodic reporting must be resumed, using the Tier 2 determined site-specific NMOC concentration, until the calculated NMOC emission rate is equal to or greater than 50 megagrams per year or the landfill is closed. The revised NMOC emission rate report, with the recalculated NMOC emission rate based on NMOC sampling and analysis, must be submitted, following the procedure specified in paragraph (j)(2) of this section, within 180 days of the first calculated exceedance of 50 megagrams per year.

(B) If the owner or operator elects to recalculate the NMOC emission rate after determining a site-specific methane generation rate constant k, as provided in Tier 3 in §60.35f(a)(4), and the resulting NMOC emission rate is less than 50 megagrams per year, annual periodic reporting must be resumed. The resulting site-specific methane generation rate constant k must be used in the NMOC emission rate calculation until such time as the emissions rate calculation results in an exceedance. The revised NMOC emission

rate report based on the provisions of § 60.35f(a)(4) and the resulting site-specific methane generation rate constant k must be submitted, following the procedure specified in paragraph (j)(2) of this section, to the Administrator within 1 year of the first calculated NMOC emission rate equaling or exceeding 50 megagrams per year.

(C) The landfill owner or operator elects to demonstrate surface emissions are low, consistent with the provisions in paragraph (d)(4)(iii) of this section.

(D) The landfill has already submitted a gas collection and control system design plan consistent with the provisions of subpart WWW of this part; 40 CFR part 62, subpart GGG; or a state plan implementing subpart Cc of this part.

(5) The landfill owner or operator must notify the Administrator that the design plan is completed and submit a copy of the plan's signature page. The Administrator has 90 days to decide whether the design plan should be submitted for review. If the Administrator chooses to review the plan, the approval process continues as described in paragraph (c)(6) of this section. However, if the Administrator indicates that submission is not required or does not respond within 90 days, the landfill owner or operator can continue to implement the plan with the recognition that the owner or operator is proceeding at their own risk. In the event that the design plan is required to be modified to obtain approval, the owner or operator must take any steps necessary to conform any prior actions to the approved design plan and any failure to do so could result in an enforcement action.

(6) Upon receipt of an initial or revised design plan, the Administrator must review the information submitted under paragraphs (d)(1) through (3) of this section and either approve it, disapprove it, or request that additional information be submitted. Because of the many site-specific factors involved with landfill gas system design, alternative systems may be necessary. A wide variety of system designs are possible, such as vertical wells, combination horizontal and vertical collection systems, or horizontal trenches only, leachate collection components, and passive systems. If the Administrator does not approve or disapprove the design plan, or does not request that additional information be submitted within 90 days of receipt, then the owner or operator may continue with implementation of the design plan, recognizing they would be proceeding at their own risk.

(7) If the owner or operator chooses to demonstrate compliance with the emission control requirements of this subpart using a treatment system as defined in this subpart, then the owner or operator must prepare a site-specific treatment system monitoring plan as specified in § 60.39f(b)(5).

(e) *Revised design plan.* The owner or operator who has already been required to submit a design plan under paragraph (d) of this section, or under subpart WWW of this part; 40 CFR part 62, subpart GGG; or a state plan implementing subpart Cc of this part, must submit a revised design plan to the Administrator for approval as follows:

(1) At least 90 days before expanding operations to an area not covered by the previously approved design plan.

(2) Prior to installing or expanding the gas collection system in a way that is not consistent with the design plan that was submitted to the Administrator according to paragraph (d) of this section.

(f) *Closure report.* Each owner or operator of a controlled landfill must submit a closure report to the Administrator within 30 days of ceasing waste acceptance. The Administrator may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR 258.60. If a closure report has been submitted to the Administrator, no additional wastes may be placed into the landfill without filing a notification of modification as described under § 60.7(a)(4).

(g) *Equipment removal report.* Each owner or operator of a controlled landfill must submit an equipment removal report to the Administrator 30 days prior to removal or cessation of operation of the control equipment.

(1) The equipment removal report must contain the following items:

(i) A copy of the closure report submitted in accordance with paragraph (f) of this section; and

(ii) A copy of the initial performance test report demonstrating that the 15-year minimum control period has expired, unless the report of the results of the performance test has been submitted to the EPA via the EPA's CDX, or information that demonstrates that the GCCS will be unable to operate for 15 years due to declining gas flows. In the equipment removal report, the process unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted may be submitted in lieu of the performance test report if the report has been previously submitted to the EPA's CDX; and

(iii) Dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 34 megagrams or greater of NMOC per year, unless the NMOC emission rate reports have been submitted to the EPA via the EPA's CDX. If the NMOC emission rate reports have been previously submitted to the EPA's CDX, a statement that the NMOC emission rate reports have been submitted electronically and the dates that the reports were submitted to the EPA's CDX may be submitted in the equipment removal report in lieu of the NMOC emission rate reports; or

(iv) For the closed landfill subcategory, dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year, unless the NMOC emission rate reports have been submitted to the EPA via the EPA's CDX. If the NMOC emission rate reports have been previously submitted to the EPA's CDX, a statement that the NMOC emission rate reports have been submitted electronically and the dates that the reports were submitted to the EPA's CDX may be submitted in the equipment removal report in lieu of the NMOC emission rate reports.

(2) The Administrator may request such additional information as may be necessary to verify that all of the conditions for removal in §60.33f(f) have been met.

(h) *Annual report.* The owner or operator of a landfill seeking to comply with §60.33f(e)(2) using an active collection system designed in accordance with §60.33f(b) must submit to the Administrator, following the procedures specified in paragraph (j)(2) of this section, an annual report of the recorded information in paragraphs (h)(1) through (7) of this section. The initial annual report must be submitted within 180 days of installation and startup of the collection and control system. The initial annual report must include the initial performance test report required under §60.8, as applicable, unless the report of the results of the performance test has been submitted to the EPA via the EPA's CDX. In the initial annual report, the process unit(s) tested, the pollutant(s) tested and the date that such performance test was conducted may be submitted in lieu of the performance test report if the report has been previously submitted to the EPA's CDX. The initial performance test report must be submitted, following the procedure specified in paragraph (j)(1) of this section, no later than the date that the initial annual report is submitted. For enclosed combustion devices and flares, reportable exceedances are defined under §60.39f(c)(1). If complying with the operational provisions of §§63.1958, 63.1960, and 63.1961 of this chapter, as allowed at §§60.34f, 60.36f, and 60.37f, the owner or operator must follow the semi-annual reporting requirements in §63.1981(h) of this chapter in lieu of this paragraph.

(1) Value and length of time for exceedance of applicable parameters monitored under §60.37f(a)(1), (b), (c), (d), and (g).

(2) Description and duration of all periods when the gas stream was diverted from the control device or treatment system through a bypass line or the indication of bypass flow as specified under §60.37f.

(3) Description and duration of all periods when the control device or treatment system was not operating and length of time the control device or treatment system was not operating.

(4) All periods when the collection system was not operating.

(5) The location of each exceedance of the 500 parts per million methane concentration as provided in §60.34f(d) and

the concentration recorded at each location for which an exceedance was recorded in the previous month. For location, you must determine the latitude and longitude coordinates using an instrument with an accuracy of at least 4 meters. The coordinates must be in decimal degrees with at least five decimal places.

(6) The date of installation and the location of each well or collection system expansion added pursuant to § 60.36f(a)(3), (a)(5), (b), and (c)(4).

(7) For any corrective action analysis for which corrective actions are required in § 60.36f(a)(3) or (5) and that take more than 60 days to correct the exceedance, the root cause analysis conducted, including a description of the recommended corrective action(s), the date for corrective action(s) already completed following the positive pressure or elevated temperature reading, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

(i) *Initial performance test report.* Each owner or operator seeking to comply with § 60.33f(c) must include the following information with the initial performance test report required under § 60.8:

(1) A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion;

(2) The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based;

(3) The documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable material;

(4) The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area;

(5) The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill; and

(6) The provisions for the control of off-site migration.

(j) *Electronic reporting.* The owner or operator must submit reports electronically according to paragraphs (j)(1) and (2) of this section.

(1) Within 60 days after the date of completing each performance test (as defined in § 60.8), the owner or operator must submit the results of each performance test according to the following procedures:

(i) For data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT Web site (*https://www3.epa.gov/ttn/chief/ert/ert_info.html*) at the time of the test, you must submit the results of the performance test to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). CEDRI can be accessed through the EPA's Central Data Exchange (CDX) (*https://cdx.epa.gov/*). Performance test data must be submitted in a file format generated through the use of the EPA's ERT or an alternative file format consistent with the extensible markup language (XML) schema listed on the EPA's ERT Web site, once the XML schema is available. If you claim that some of the performance test information being submitted is confidential business information (CBI), you must submit a complete file generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT Web site, including information claimed to be CBI, on a compact disc, flash drive or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAQPS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404–02, 4930 Old Page Rd., Durham, NC 27703. The same ERT or alternate file with the CBI omitted must be submitted to the EPA

via the EPA's CDX as described earlier in this paragraph (j)(1)(i).

(ii) For data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT Web site at the time of the test, you must submit the results of the performance test to the Administrator at the appropriate address listed in §60.4.

(2) Each owner or operator required to submit reports following the procedure specified in this paragraph must submit reports to the EPA via the CEDRI. (CEDRI can be accessed through the EPA's CDX.) The owner or operator must use the appropriate electronic report in CEDRI for this subpart or an alternate electronic file format consistent with the XML schema listed on the CEDRI Web site (*https://www3.epa.gov/ttn/chief/cedri/index.html*). If the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the owner or operator must submit the report to the Administrator at the appropriate address listed in §60.4. Once the form has been available in CEDRI for 90 calendar days, the owner or operator must begin submitting all subsequent reports via CEDRI. The reports must be submitted by the deadlines specified in this subpart, regardless of the method in which the reports are submitted.

(k) *Corrective action and the corresponding timeline.* The owner or operator must submit according to paragraphs (k)(1) and (2) of this section. If complying with the operational provisions of §§63.1958, 63.1960, and 63.1961 of this chapter, as allowed at §§60.34f, 60.36f, and 60.37f, the owner or operator must follow the corrective action and the corresponding timeline reporting requirements in §63.1981(j) of this chapter in lieu of paragraphs (k)(1) and (2) of this section.

(1) For corrective action that is required according to §60.36f(a)(3)(iii) or (a)(5)(iii) and is expected to take longer than 120 days after the initial exceedance to complete, you must submit the root cause analysis, corrective action analysis, and corresponding implementation timeline to the Administrator as soon as practicable but no later than 75 days after the first measurement of positive pressure or temperature monitoring value of 55 degrees Celsius (131 degrees Fahrenheit) or above. The Administrator must approve the plan for corrective action and the corresponding timeline.

(2) For corrective action that is required according to §60.36f(a)(3)(iii) or (a)(5)(iii) and is not completed within 60 days after the initial exceedance, you must submit a notification to the Administrator as soon as practicable but no later than 75 days after the first measurement of positive pressure or temperature exceedance.

(l) *Liquids addition.* The owner or operator of an affected landfill with a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters that has employed leachate recirculation or added liquids based on a Research, Development, and Demonstration permit (issued through Resource Conservation and Recovery Act, subtitle D, part 258) within the last 10 years must submit to the Administrator, annually, following the procedure specified in paragraph (j)(2) of this section, the following information:

(1) Volume of leachate recirculated (gallons per year) and the reported basis of those estimates (records or engineering estimates).

(2) Total volume of all other liquids added (gallons per year) and the reported basis of those estimates (records or engineering estimates).

(3) Surface area (acres) over which the leachate is recirculated (or otherwise applied).

(4) Surface area (acres) over which any other liquids are applied.

(5) The total waste disposed (megagrams) in the areas with recirculated leachate and/or added liquids based on on-site records to the extent data are available, or engineering estimates and the reported basis of those estimates.

(6) The annual waste acceptance rates (megagrams per year) in the areas with recirculated leachate and/or added liquids, based on on-site records to the extent data are available, or engineering estimates.

(7) The initial report must contain items in paragraph (l)(1) through (6) of this section per year for the most recent 365 days as well as for each of the previous 10 years, to the extent historical data are available in on-site

records, and the report must be submitted no later than:

(i) September 27, 2017, for landfills that commenced construction, modification, or reconstruction after July 17, 2014 but before August 29, 2016; or

(ii) 365 days after the date of commenced construction, modification, or reconstruction for landfills that commence construction, modification, or reconstruction after August 29, 2016.

(8) Subsequent annual reports must contain items in paragraph (l)(1) through (6) of this section for the 365-day period following the 365-day period included in the previous annual report, and the report must be submitted no later than 365 days after the date the previous report was submitted.

(9) Landfills in the closed landfill subcategory are exempt from reporting requirements contained in paragraphs (l)(1) through (7) of this section.

(10) Landfills may cease annual reporting of items in paragraphs (l)(1) through (6) of this section once they have submitted the closure report in § 60.38f(f).

(m) *Tier 4 notification*. (1) The owner or operator of an affected landfill with a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters must provide a notification of the date(s) upon which it intends to demonstrate site-specific surface methane emissions are below 500 parts per million methane, based on the Tier 4 provisions of § 60.35f(a)(6). The landfill must also include a description of the wind barrier to be used during the SEM in the notification. Notification must be postmarked not less than 30 days prior to such date.

(2) If there is a delay to the scheduled Tier 4 SEM date due to weather conditions, including not meeting the wind requirements in § 60.35f (a)(6)(iii)(A), the owner or operator of a landfill shall notify the Administrator by email or telephone no later than 48 hours before any known delay in the original test date, and arrange an updated date with the Administrator by mutual agreement.

(n) Each owner or operator that chooses to comply with the provisions in §§ 63.1958, 63.1960, and 63.1961 of this chapter, as allowed in §§ 60.34f, 60.36f, and 60.37f, must submit the 24-hour high temperature report according to § 63.1981(k) of this chapter.

[81 FR 59313, Aug. 29, 2016, as amended at 85 FR 17260, Mar. 26, 2020]

§ 60.39f Recordkeeping guidelines.

For approval, a state plan must include the recordkeeping provisions in this section.

(a) Except as provided in § 60.38f(d)(2), each owner or operator of an MSW landfill subject to the provisions of § 60.33f(e) must keep for at least 5 years up-to-date, readily accessible, on-site records of the design capacity report that triggered § 60.33f(e), the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

(b) Except as provided in § 60.38f(d)(2), each owner or operator of a controlled landfill must keep up-to-date, readily accessible records for the life of the control system equipment of the data listed in paragraphs (b)(1) through (5) of this section as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring must be maintained for a minimum of 5 years. Records of the control device vendor specifications must be maintained until removal.

(1) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.33f(b):

(i) The maximum expected gas generation flow rate as calculated in § 60.36f(a)(1). The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Administrator.

(ii) The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in § 60.40f(a)(1).

(2) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.33f(c) through use of an enclosed combustion device other than a boiler or process heater with a design heat

input capacity equal to or greater than 44 megawatts:

(i) The average temperature measured at least every 15 minutes and averaged over the same time period of the performance test.

(ii) The percent reduction of NMOC determined as specified in § 60.33f(c)(2) achieved by the control device.

(3) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.33f(c)(2)(i) through use of a boiler or process heater of any size: A description of the location at which the collected gas vent stream is introduced into the boiler or process heater over the same time period of the performance testing.

(4) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.33f(c)(1) through use of a non-enclosed flare, the flare type (*i.e.*, steam-assisted, air-assisted, or non-assisted), all visible emission readings, heat content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in § 60.18; and continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the pilot flame or the flare flame is absent.

(5) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.33f(c)(3) through use of a landfill gas treatment system:

(i) *Bypass records.* Records of the flow of landfill gas to, and bypass of, the treatment system.

(ii) *Site-specific treatment monitoring plan,* to include:

(A) Monitoring records of parameters that are identified in the treatment system monitoring plan and that ensure the treatment system is operating properly for each intended end use of the treated landfill gas. At a minimum, records should include records of filtration, de-watering, and compression parameters that ensure the treatment system is operating properly for each intended end use of the treated landfill gas.

(B) Monitoring methods, frequencies, and operating ranges for each monitored operating parameter based on manufacturer's recommendations or engineering analysis for each intended end use of the treated landfill gas.

(C) Documentation of the monitoring methods and ranges, along with justification for their use.

(D) Identify who is responsible (by job title) for data collection.

(E) Processes and methods used to collect the necessary data.

(F) Description of the procedures and methods that are used for quality assurance, maintenance, and repair of all continuous monitoring systems.

(c) Except as provided in § 60.38f(d)(2), each owner or operator of a controlled landfill subject to the provisions of this subpart must keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in § 60.37f as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.

(1) The following constitute exceedances that must be recorded and reported under § 60.38f:

(i) For enclosed combustors except for boilers and process heaters with design heat input capacity of 44 megawatts (150 million British thermal unit per hour) or greater, all 3-hour periods of operation during which the average temperature was more than 28 degrees Celsius (82 degrees Fahrenheit) below the average combustion temperature during the most recent performance test at which compliance with § 60.33f(c) was determined.

(ii) For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under paragraph (b)(3) of this section.

(2) Each owner or operator subject to the provisions of this subpart must keep up-to-date, readily accessible continuous records of the indication of flow to the control system and the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, specified under § 60.37f.

(3) Each owner or operator subject to the provisions of this subpart who uses

a boiler or process heater with a design heat input capacity of 44 megawatts or greater to comply with § 60.33f(c) must keep an up-to-date, readily accessible record of all periods of operation of the boiler or process heater. (Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other state, local, tribal, or federal regulatory requirements.)

(4) Each owner or operator seeking to comply with the provisions of this subpart by use of a non-enclosed flare must keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under § 60.37f(c), and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.

(5) Each owner or operator of a landfill seeking to comply with § 60.33f(e) using an active collection system designed in accordance with § 60.33f(b) must keep records of periods when the collection system or control device is not operating.

(d) Except as provided in § 60.38f(d)(2), each owner or operator subject to the provisions of this subpart must keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label on each collector that matches the labeling on the plot map.

(1) Each owner or operator subject to the provisions of this subpart must keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under § 60.36f(b).

(2) Each owner or operator subject to the provisions of this subpart must keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in § 60.40f(a)(3)(i) as well as any nonproductive areas excluded from collection as provided in § 60.40f(a)(3)(ii).

(e) Except as provided in § 60.38f(d)(2), each owner or operator subject to the provisions of this subpart must keep for at least 5 years up-to-date, readily accessible records of the items in paragraphs (e)(1) through (5) of this section. Each owner or operator that chooses to comply with the provisions in §§ 63.1958, 63.1960, and 63.1961 of this chapter, as allowed in §§ 60.34f, 60.36f, and 60.37f, must keep the records in paragraph (e)(6) of this section and must keep records according to § 63.1983(e)(1) through (5) of this chapter in lieu of paragraphs (e)(1) through (5) of this section.

(1) All collection and control system exceedances of the operational standards in § 60.34f, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.

(2) Each owner or operator subject to the provisions of this subpart must also keep records of each wellhead temperature monitoring value of 55 degrees Celsius (131 degrees Fahrenheit) or above, each wellhead nitrogen level at or above 20 percent, and each wellhead oxygen level at or above 5 percent.

(3) For any root cause analysis for which corrective actions are required in § 60.36f(a)(3) or (5), keep a record of the root cause analysis conducted, including a description of the recommended corrective action(s) taken, and the date(s) the corrective action(s) were completed.

(4) For any root cause analysis for which corrective actions are required in § 60.36f(a)(3)(ii) or (a)(5)(ii), keep a record of the root cause analysis conducted, the corrective action analysis, the date for corrective action(s) already completed following the positive pressure reading or high temperature reading, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

(5) For any root cause analysis for which corrective actions are required in § 60.36f(a)(3)(iii) or (a)(5)(iii), keep a record of the root cause analysis conducted, the corrective action analysis, the date for corrective action(s) already completed following the positive pressure reading or high temperature reading, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates, and a copy of any

comments or final approval on the corrective action analysis or schedule from the regulatory agency.

(6) Each owner or operator that chooses to comply with the provisions in §§ 63.1958, 63.1960, and 63.1961 of this chapter, as allowed in §§ 60.34f, 60.36f, and 60.37f, must keep records of the date upon which the owner or operator started complying with the provisions in §§ 63.1958, 63.1960, and 63.1961.

(f) Landfill owners or operators who convert design capacity from volume to mass or mass to volume to demonstrate that landfill design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, as provided in the definition of ''design capacity'', must keep readily accessible, on-site records of the annual recalculation of site-specific density, design capacity, and the supporting documentation. Offsite records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

(g) Landfill owners or operators seeking to demonstrate that site-specific surface methane emissions are below 500 parts per million by conducting surface emission monitoring under the Tier 4 procedures specified in § 60.35f(a)(6) must keep for at least 5 years up-to-date, readily accessible records of all surface emissions monitoring and information related to monitoring instrument calibrations conducted according to sections 8 and 10 of Method 21 of appendix A of this part, including all of the following items:

(1) Calibration records:

(i) Date of calibration and initials of operator performing the calibration.

(ii) Calibration gas cylinder identification, certification date, and certified concentration.

(iii) Instrument scale(s) used.

(iv) A description of any corrective action taken if the meter readout could not be adjusted to correspond to the calibration gas value.

(v) If an owner or operator makes their own calibration gas, a description of the procedure used.

(2) Digital photographs of the instrument setup. The photographs must be time and date-stamped and taken at the first sampling location prior to sampling and at the last sampling location after sampling at the end of each sampling day, for the duration of the Tier 4 monitoring demonstration.

(3) Timestamp of each surface scan reading:

(i) Timestamp should be detailed to the nearest second, based on when the sample collection begins.

(ii) A log for the length of time each sample was taken using a stopwatch (*e.g.*, the time the probe was held over the area).

(4) Location of each surface scan reading. The owner or operator must determine the coordinates using an instrument with an accuracy of at least 4 meters. Coordinates must be in decimal degrees with at least five decimal places.

(5) Monitored methane concentration (parts per million) of each reading.

(6) Background methane concentration (parts per million) after each instrument calibration test.

(7) Adjusted methane concentration using most recent calibration (parts per million).

(8) For readings taken at each surface penetration, the unique identification location label matching the label specified in paragraph (d) of this section.

(9) Records of the operating hours of the gas collection system for each destruction device.

(h) Except as provided in § 60.38f(d)(2), each owner or operator subject to the provisions of this subpart must keep for at least 5 years up-to-date, readily accessible records of all collection and control system monitoring data for parameters measured in § 60.37f(a)(1), (2), and (3).

(i) Any records required to be maintained by this subpart that are submitted electronically via the EPA's CDX may be maintained in electronic format.

(j) For each owner or operator reporting leachate or other liquids addition under § 60.38f(l), keep records of any engineering calculations or company records used to estimate the quantities of leachate or liquids added, the surface areas for which the leachate or liquids were applied, and the estimates of annual waste acceptance or total waste

in place in the areas where leachate or liquids were applied.

[81 FR 59313, Aug. 29, 2016, as amended at 85 FR 17260, Mar. 26, 2020]

§ 60.40f Specifications for active collection systems.

For approval, a state plan must include the specifications for active collection systems in this section.

(a) Each owner or operator seeking to comply with § 60.33f(b) must site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the following procedures unless alternative procedures have been approved by the Administrator.

(1) The collection devices within the interior must be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues must be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, resistance to the refuse decomposition heat, and ability to isolate individual components or sections for repair or troubleshooting without shutting down entire collection system.

(2) The sufficient density of gas collection devices determined in paragraph (a)(1) of this section must address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior.

(3) The placement of gas collection devices determined in paragraph (a)(1) of this section must control all gas producing areas, except as provided by paragraphs (a)(3)(i) and (ii) of this section.

(i) Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under § 60.39f(d). The documentation must provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and must be provided to the Administrator upon request.

(ii) Any nonproductive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material must be documented and provided to the Administrator upon request. A separate NMOC emissions estimate must be made for each section proposed for exclusion, and the sum of all such sections must be compared to the NMOC emissions estimate for the entire landfill.

(A) The NMOC emissions from each section proposed for exclusion must be computed using Equation 7:

$$Q_i = 2kL_oM_i(e^{-kt_i})(C_{NMOC})(3.6\ x\ 10^{-9}) \qquad \text{(Eq. 7)}$$

Where:

Q_i = NMOC emission rate from the i^{th} section, megagrams per year.

k = Methane generation rate constant, $year^{-1}$.

L_o = Methane generation potential, cubic meters per megagram solid waste.

M_i = Mass of the degradable solid waste in the i^{th} section, megagram.

t_i = Age of the solid waste in the i^{th} section, years.

C_{NMOC} = Concentration of NMOC, parts per million by volume.

3.6×10^{-9} = Conversion factor.

(B) If the owner or operator is proposing to exclude, or cease gas collection and control from, nonproductive physically separated (*e.g.,* separately lined) closed areas that already have gas collection systems, NMOC emissions from each physically separated closed area must be computed using either Equation 3 in § 60.35f or Equation 7 in paragraph (a)(3)(ii)(A) of this section.

(iii) The values for k and C_{NMOC} determined in field testing must be used if

field testing has been performed in determining the NMOC emission rate or the radii of influence (the distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for k, L_o, and C_{NMOC} provided in § 60.35f or the alternative values from § 60.35f must be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in paragraph (a)(3)(i) of this section.

(b) Each owner or operator seeking to comply with § 60.33f(b) must construct the gas collection devices using the following equipment or procedures:

(1) The landfill gas extraction components must be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: Convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system must extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors must be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations must be situated with regard to the need to prevent excessive air infiltration.

(2) Vertical wells must be placed so as not to endanger underlying liners and must address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors must be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices must be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.

(3) Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly must include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices must be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness.

(c) Each owner or operator seeking to comply with § 60.33f(c) must convey the landfill gas to a control system in compliance with § 60.33f(c) through the collection header pipe(s). The gas mover equipment must be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures:

(1) For existing collection systems, the flow data must be used to project the maximum flow rate. If no flow data exist, the procedures in paragraph (c)(2) of this section must be used.

(2) For new collection systems, the maximum flow rate must be in accordance with § 60.36f(a)(1).

§ 60.41f Definitions.

Terms used but not defined in this subpart have the meaning given them in the Clean Air Act and in subparts A and B of this part.

Active collection system means a gas collection system that uses gas mover equipment.

Active landfill means a landfill in which solid waste is being placed or a landfill that is planned to accept waste in the future.

Administrator means the Administrator of the U.S. Environmental Protection Agency or his/her authorized representative or the Administrator of a state air pollution control agency.

Closed area means a separately lined area of an MSW landfill in which solid waste is no longer being placed. If additional solid waste is placed in that area of the landfill, that landfill area is no longer closed. The area must be separately lined to ensure that the landfill gas does not migrate between open and closed areas.

Closed landfill means a landfill in which solid waste is no longer being placed, and in which no additional solid wastes will be placed without first filing a notification of modification as prescribed under §60.7(a)(4). Once a notification of modification has been filed, and additional solid waste is placed in the landfill, the landfill is no longer closed.

Closed landfill subcategory means a closed landfill that has submitted a closure report as specified in §60.38f(f) on or before September 27, 2017.

Closure means that point in time when a landfill becomes a closed landfill.

Commercial solid waste means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes.

Controlled landfill means any landfill at which collection and control systems are required under this subpart as a result of the NMOC emission rate. The landfill is considered controlled at the time a collection and control system design plan is prepared in compliance with §60.33f(e)(2).

Corrective action analysis means a description of all reasonable interim and long-term measures, if any, that are available, and an explanation of why the selected corrective action(s) is/are the best alternative(s), including, but not limited to, considerations of cost effectiveness, technical feasibility, safety, and secondary impacts.

Design capacity means the maximum amount of solid waste a landfill can accept, as indicated in terms of volume or mass in the most recent permit issued by the state, local, or tribal agency responsible for regulating the landfill, plus any in-place waste not accounted for in the most recent permit. If the owner or operator chooses to convert the design capacity from volume to mass or from mass to volume to demonstrate its design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, the calculation must include a site-specific density, which must be recalculated annually.

Disposal facility means all contiguous land and structures, other appurtenances, and improvements on the land used for the disposal of solid waste.

Emission rate cutoff means the threshold annual emission rate to which a landfill compares its estimated emission rate to determine if control under the regulation is required.

Enclosed combustor means an enclosed firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air. An enclosed flare is considered an enclosed combustor.

Flare means an open combustor without enclosure or shroud.

Gas mover equipment means the equipment (*i.e.*, fan, blower, compressor) used to transport landfill gas through the header system.

Gust means the highest instantaneous wind speed that occurs over a 3-second running average.

Household waste means any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including, but not limited to, single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas). Household waste does not include fully segregated yard waste. Segregated yard waste means vegetative matter resulting exclusively from the cutting of grass, the pruning and/or removal of bushes, shrubs, and trees, the weeding of gardens, and other landscaping maintenance activities. Household waste does not include construction, renovation, or demolition wastes, even if originating from a household.

Industrial solid waste means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of the Resource Conservation and Recovery Act, parts 264 and 265 of this chapter. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper

industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

Interior well means any well or similar collection component located inside the perimeter of the landfill waste. A perimeter well located outside the landfilled waste is not an interior well.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile as those terms are defined under § 257.2 of this title.

Lateral expansion means a horizontal expansion of the waste boundaries of an existing MSW landfill. A lateral expansion is not a modification unless it results in an increase in the design capacity of the landfill.

Leachate recirculation means the practice of taking the leachate collected from the landfill and reapplying it to the landfill by any of one of a variety of methods, including pre-wetting of the waste, direct discharge into the working face, spraying, infiltration ponds, vertical injection wells, horizontal gravity distribution systems, and pressure distribution systems.

Modification means an increase in the permitted volume design capacity of the landfill by either lateral or vertical expansion based on its permitted design capacity as of July 17, 2014. Modification does not occur until the owner or operator commences construction on the lateral or vertical expansion.

Municipal solid waste landfill or *MSW landfill* means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. An MSW landfill may also receive other types of Resource Conservation and Recovery Act (RCRA) Subtitle D wastes (§ 257.2 of this title) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of an MSW landfill may be separated by access roads. An MSW landfill may be publicly or privately owned. An MSW landfill may be a new MSW landfill, an existing MSW landfill, or a lateral expansion.

Municipal solid waste landfill emissions or *MSW landfill emissions* means gas generated by the decomposition of organic waste deposited in an MSW landfill or derived from the evolution of organic compounds in the waste.

NMOC means nonmethane organic compounds, as measured according to the provisions of § 60.35f.

Nondegradable waste means any waste that does not decompose through chemical breakdown or microbiological activity. Examples are, but are not limited to, concrete, municipal waste combustor ash, and metals.

Passive collection system means a gas collection system that solely uses positive pressure within the landfill to move the gas rather than using gas mover equipment.

Protectorate means American Samoa, the Commonwealth of Puerto Rico, the District of Columbia, Guam, the Northern Mariana Islands, and the Virgin Islands.

Root cause analysis means an assessment conducted through a process of investigation to determine the primary cause, and any other contributing causes, of positive pressure at a wellhead.

Sludge means the term sludge as defined in 40 CFR 258.2.

Solid waste means the term solid waste as defined in 40 CFR 258.2.

State means any of the 50 United States and the protectorates of the United States.

State plan means a plan submitted pursuant to section 111(d) of the Clean Air Act and subpart B of this part that implements and enforces this subpart.

Sufficient density means any number, spacing, and combination of collection system components, including vertical wells, horizontal collectors, and surface collectors, necessary to maintain emission and migration control as determined by measures of performance set forth in this part.

Sufficient extraction rate means a rate sufficient to maintain a negative pressure at all wellheads in the collection

system without causing air infiltration, including any wellheads connected to the system as a result of expansion or excess surface emissions, for the life of the blower.

Treated landfill gas means landfill gas processed in a treatment system as defined in this subpart.

Treatment system means a system that filters, de-waters, and compresses landfill gas for sale or beneficial use.

*Untreated landfil*l gas means any landfill gas that is not treated landfill gas.

Subpart D—Standards of Performance for Fossil-Fuel-Fired Steam Generators

SOURCE: 72 FR 32717, June 13, 2007, unless otherwise noted.

§ 60.40 Applicability and designation of affected facility.

(a) The affected facilities to which the provisions of this subpart apply are:

(1) Each fossil-fuel-fired steam generating unit of more than 73 megawatts (MW) heat input rate (250 million British thermal units per hour (MMBtu/hr)).

(2) Each fossil-fuel and wood-residue-fired steam generating unit capable of firing fossil fuel at a heat input rate of more than 73 MW (250 MMBtu/hr).

(b) Any change to an existing fossil-fuel-fired steam generating unit to accommodate the use of combustible materials, other than fossil fuels as defined in this subpart, shall not bring that unit under the applicability of this subpart.

(c) Except as provided in paragraph (d) of this section, any facility under paragraph (a) of this section that commenced construction or modification after August 17, 1971, is subject to the requirements of this subpart.

(d) The requirements of §§ 60.44 (a)(4), (a)(5), (b) and (d), and 60.45(f)(4)(vi) are applicable to lignite-fired steam generating units that commenced construction or modification after December 22, 1976.

(e) Any facility subject to either subpart Da or KKKK of this part is not subject to this subpart.

[72 FR 32717, June 13, 2007, as amended at 77 FR 9447, Feb. 16, 2012]

§ 60.41 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act, and in subpart A of this part.

Boiler operating day means a 24-hour period between 12 midnight and the following midnight during which any fuel is combusted at any time in the steam-generating unit. It is not necessary for fuel to be combusted the entire 24-hour period.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by ASTM D388 (incorporated by reference, see § 60.17).

Coal refuse means waste-products of coal mining, cleaning, and coal preparation operations (e.g. culm, gob, etc.) containing coal, matrix material, clay, and other organic and inorganic material.

Fossil fuel means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such materials for the purpose of creating useful heat.

Fossil fuel and wood residue-fired steam generating unit means a furnace or boiler used in the process of burning fossil fuel and wood residue for the purpose of producing steam by heat transfer.

Fossil-fuel-fired steam generating unit means a furnace or boiler used in the process of burning fossil fuel for the purpose of producing steam by heat transfer.

Natural gas means a fluid mixture of hydrocarbons (e.g., methane, ethane, or propane), composed of at least 70 percent methane by volume or that has a gross calorific value between 35 and 41 megajoules (MJ) per dry standard cubic meter (950 and 1,100 Btu per dry standard cubic foot), that maintains a gaseous state under ISO conditions. In addition, *natural gas* contains 20.0 grains or less of total sulfur per 100 standard cubic feet. Finally, natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas,

62.16720(a)(4), 62.16722(a)(2) and (3), 62.16724(k), and 62.16726(e)(2) and (5).

* * * * *

■ 4. Part 62 is amended by adding subpart OOO, consisting of §§ 62.16710 through 62.16730, to read as follows:

Subpart OOO—Federal Plan Requirements for Municipal Solid Waste Landfills That Commenced Construction On or Before July 17, 2014 and Have Not Been Modified or Reconstructed Since July 17, 2014

Sec

§ 62.16710 Scope and delegated authorities.

This subpart establishes emission control requirements and compliance schedules for the control of designated pollutants from certain designated municipal solid waste (MSW) landfills in accordance with section 111(d) of the Clean Air Act and subpart B of 40 CFR part 60.

(a) If you own or operate a designated facility as described in § 62.16711, then you must comply with this subpart.

(b) The following authorities will not be delegated to state, local, or tribal agencies:

(1) Approval of alternative methods to determine the site-specific nonmethane organic compounds (NMOC) concentration or a site-specific methane generation rate constant (k).

(2) Alternative emission standards.

(3) Major alternatives to test methods. Major alternatives to test methods or to monitoring are modifications made to a federally enforceable test method or to a Federal monitoring requirement. These changes may involve the use of unproven technology or modified procedures or an entirely new method.

(4) Waivers of recordkeeping.

§ 62.16711 Designated facilities.

(a) The designated facility to which this subpart applies is each municipal solid waste landfill in each state, protectorate, and portion of Indian country that meets the conditions of paragraphs (a)(1) and (2) of this section, except for landfills exempted by paragraphs (b) and (c) of this section.

(1) The municipal solid waste landfill commenced construction, reconstruction, or modification on or before July 17, 2014.

(2) The municipal solid waste landfill has accepted waste at any time since November 8, 1987, or the landfill has additional capacity for future waste deposition.

(b) A municipal solid waste landfill regulated by an EPA-approved and currently effective state or tribal plan implementing 40 CFR 60, subpart Cf, is not subject to the requirements of this subpart.

(c) A municipal solid waste landfill located in a state, locality, or portion of Indian country that submitted a negative declaration letter is not subject to the requirements of this subpart other than the requirements in the definition of design capacity in § 62.16730 to recalculate the site-specific density annually and in § 62.16724(b) to submit an amended design capacity report in the event that the recalculated design capacity is equal to or greater than 2.5 million megagrams and 2.5 million cubic meters. However, if the existing municipal solid waste landfill already has a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, then it is subject to the requirements of this Federal plan.

(d) Physical or operational changes made to an existing MSW landfill solely to comply with an emission guideline implemented by a state or Federal plan are not considered a modification or reconstruction and would not subject an existing MSW landfill to the requirements of 40 CFR 60, subpart XXX. Landfills that commence construction, modification, or reconstruction after July 17, 2014, are subject to 40 CFR part 60, subpart XXX.

(e) For purposes of obtaining an operating permit under title V of the Clean Air Act, the owner or operator of an MSW landfill subject to this subpart with a design capacity less than 2.5 million megagrams or 2.5 million cubic meters is not subject to the requirement to obtain an operating permit for the landfill under 40 CFR part 70 or 71, unless the landfill is otherwise subject to either 40 CFR part 70 or 71. For purposes of submitting a timely application for an operating permit under 40 CFR part 70 or 71, the owner or operator of an MSW landfill subject to this subpart with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters, and not otherwise subject to either 40 CFR part 70 or 71, becomes subject to the requirements of § 70.5(a)(1)(i) or 71.5(a)(1)(i) of this chapter 90 days after the effective date of such CAA section 111(d) program approval, even if the design capacity report is submitted earlier.

(f) When an MSW landfill subject to this subpart is closed as defined in this subpart, the owner or operator is no longer subject to the requirement to maintain an operating permit under 40 CFR part 70 or 71 for the landfill if the landfill is not otherwise subject to the requirements of either 40 CFR part 70 or 71 and if either of the following conditions are met:

(1) The landfill was never subject to the requirement to install and operate a gas collection and control system under § 62.16714; or

(2) The landfill meets the conditions for control system removal specified in § 62.16714(f).

(g) When an MSW landfill subject to this subpart is in the closed landfill subcategory, the owner or operator is not subject to the following reports of this subpart, provided the owner or operator submitted these reports under the provisions of 40 CFR part 60, subpart WWW; subpart GGG of this part; or a state plan implementing 40 CFR part 60, subpart Cc, on or before July 17, 2014:

(1) Initial design capacity report specified in § 62.16724(a).

(2) Initial or subsequent NMOC emission rate report specified in § 62.16724(c), provided that the most recent NMOC emission rate report indicated the NMOC emissions were below 50 megagrams per year.

(3) Collection and control system design plan specified in § 62.16724(d).

(4) Closure report specified in § 62.16724(f).

(5) Equipment removal report specified in § 62.16724(g).

(6) Initial annual report specified in § 62.16724(h).

(7) Initial performance test report in § 62.16724(i).

(h) When an MSW landfill subject to this subpart is a legacy controlled landfill, as defined in § 62.16730, the owner or operator is not subject to the following reports of this subpart, provided the owner or operator submitted these reports under 40 CFR part 60, subpart WWW; subpart GGG of this part; or a state plan implementing 40 CFR part 60, subpart Cc on or before June 21, 2021.

(1) Initial design capacity report specified in § 62.16724(a).

(2) Initial or subsequent NMOC emission rate report specified in § 62.16724(c).

(3) Collection and control system design plan specified in § 62.16724(d).

(5) Initial annual report specified in § 62.16724(h).

(4) Initial performance test report in § 62.16724(i).

§ 62.16712 Compliance schedule and increments of progress.

Planning, awarding of contracts, installing, and starting up MSW landfill air emission collection and control equipment that is capable of meeting the emission standards of § 62.16714 must be completed within 30 months after the date an NMOC emission rate report shows NMOC emissions equal or exceed 34 megagrams per year; or within 30 months after the date of the most recent NMOC emission rate report that shows NMOC emissions equal or exceed 34 megagrams per year, if Tier 4 surface emissions monitoring (SEM) shows a surface emission concentration of 500 parts per million methane or greater. Legacy controlled landfills who have not yet reached increment 5 (full compliance) must demonstrate compliance with any remaining increments of progress on this schedule. However, they must use the date of their first report submitted under 40 CFR part 60, subpart WWW, 40 CFR part 62, subpart GGG or a state plan implementing 40 CFR part 60, subpart Cc showing NMOC emissions at or above 50 megagrams. The owner or operator must follow the requirements in paragraphs (a) through (d) of this section.

(a) *Increments of progress.* The owner or operator of a designated facility that has a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters and a NMOC emission rate greater than or equal to 34 megagrams per year must achieve the increments of progress specified in paragraphs (a)(1) through (5) of this section to install air pollution control devices to meet the emission standards specified in § 62.16714(b) and (c) of this subpart. Refer to § 62.16730 for a definition of each increment of progress.

(1) *Submit control plan.* Submit a final control plan (collection and control system design plan) according to the requirements of § 62.16724(d).

(2) *Award contract(s).* Award contract(s) to initiate on-site construction or initiate on-site installation of emission collection and/or control equipment.

(3) *Initiate on-site construction.* Initiate on-site construction or initiate on-site installation of emission collection and/or control equipment as described in the EPA-approved final control plan.

(4) *Complete on-site construction.* Complete on-site construction and installation of emission collection and/or control equipment.

(5) *Achieve final compliance.* Complete construction in accordance with the design specified in the EPA-approved final control plan and connect the landfill gas collection system and air pollution control equipment such that they are fully operating. The initial performance test must be conducted within 180 days after the date the facility is required to achieve final compliance. For a legacy controlled landfill, the initial or most recent performance test conducted to comply with 40 CFR part 60, subpart WWW, subpart GGG of this part, or a state plan implementing 40 CFR part 60, subpart Cc is sufficient for compliance with this part. The test report does not have to be resubmitted.

(b) *Compliance date.* For each designated facility that has a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters and a NMOC emission rate greater than or equal to 34 megagrams per year (50 megagrams per year for closed landfill subcategory), planning, awarding of contracts, and installation of municipal solid waste landfill air emission collection and control equipment capable of meeting the standards in § 62.16714(b) and (c) must be accomplished within 30 months after the date the initial emission rate report (or the annual emission rate report) first shows that the NMOC emission rate equals or exceeds 34 megagrams per year (50 megagrams per year for closed landfill subcategory), except as provided in § 62.16712(c)(3).

(c) *Compliance schedules.* The owner or operator of a designated facility that has a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters and a NMOC emission rate greater than or equal to 34 megagrams per year (50 megagrams per year for closed landfill subcategory) must achieve the increments of progress specified in paragraphs (a)(1) through (5) of this section according to the schedule specified in paragraph (c)(1), (2), or (3) of this section.

(1) *Achieving Increments of Progress.* The owner or operator of a designated facility must achieve the increments of progress according to the schedule in table 1 of this subpart. Once this subpart becomes effective, any designated facility to which this subpart applies will remain subject to the schedule in table 1 if a subsequently approved state or tribal plan contains a less stringent schedule, (*i.e.,* a schedule that provides more time to comply with increments 1, 4 and/or 5 than does this Federal plan).

(2) *Tier 4.* The owner or operator of a designated facility that is using the Tier 4 procedures specified in § 62.16718(a)(6) must achieve the increments of progress according to the schedule in table 1 of this subpart.

(d) *Alternative dates.* For designated facilities that are subject to the schedule requirements of paragraph (c)(1) of this section, the owner or operator (or the state or tribal air pollution control authority) may submit to the appropriate EPA Regional Office for approval alternative dates for achieving increments 2 and 3.

§ 62.16714 Standards for municipal solid waste landfill emissions.

(a) *Landfills.* Each owner or operator of an MSW landfill having a design capacity greater than or equal to 2.5 million megagrams by mass and 2.5 million cubic meters by volume must collect and control MSW landfill emissions at each MSW landfill that meets the following conditions:

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

(2) *Construction commencement date.* The landfill commenced construction, reconstruction, or modification on or before July 17, 2014.

(3) *NMOC emission rate.* The landfill has an NMOC emission rate greater than or equal to 34 megagrams per year or Tier 4 SEM shows a surface emission concentration of 500 parts per million methane or greater.

(4) *Closed subcategory.* The landfill in the closed landfill subcategory and has an NMOC emission rate greater than or equal to 50 megagrams per year.

(b) *Collection system.* Install a gas collection and control system meeting the requirements in paragraphs (b)(1) through (3) and (c) of this section at each MSW landfill meeting the conditions in paragraph (a) of this section.

(1) *Collection system.* Install and start up a collection and control system that captures the gas generated within the landfill within 30 months after:

(i) The first annual report in which the NMOC emission rate equals or exceeds 34 megagrams per year, unless Tier 2 or Tier 3 sampling demonstrates that the NMOC emission rate is less than 34 megagrams per year, as specified in § 62.16724(d)(4), or

(ii) The first annual report in which the NMOC emission rate equals or exceeds 50 megagrams per year submitted under previously applicable

regulations 40 CFR part 60, subpart WWW, 40 CFR part 62, subpart GGG, or a state plan implementing 40 CFR part 60, subpart Cc for a legacy controlled landfill or landfill in the closed landfill subcategory, or

(iii) The most recent NMOC emission rate report in which the NMOC emission rate equals or exceeds 34 megagrams per year based on Tier 2, if the Tier 4 SEM shows a surface methane emission concentration of 500 parts per million methane or greater as specified in § 62.16724 (d)(4)(iii).

(2) *Active.* An active collection system must:

(i) 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.

(ii) 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 5 years or more if active; or 2 years or more if closed or at final grade.

(iii) Collect gas at a sufficient extraction rate.

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

(3) *Passive.* A passive collection system must:

(i) Comply with the provisions specified in paragraphs (b)(2)(i), (ii), and (iv) of this section.

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

(c) *Control system.* Control the gas collected from within the landfill through the use of control devices meeting the following requirements, except as provided in 40 CFR 60.24.

(1) A non-enclosed flare designed and operated in accordance with the parameters established in 40 CFR 60.18 except as noted in § 62.16722(d); or

(2) A control system designed and operated to reduce NMOC by 98 weight percent; or when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts-per-million by volume, dry basis as hexane at 3-percent oxygen or less. The reduction efficiency or concentration in parts-per-million by volume must be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in § 62.16718(d). The performance test is not required for boilers and process heaters with design heat input capacities equal to or greater than 44 megawatts that burn landfill gas for compliance with this subpart.

(i) If a boiler or process heater is used as the control device, the landfill gas stream must be introduced into the flame zone.

(ii) The control device must be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in § 62.16722.

(iii) Legacy controlled landfills or landfills in the closed landfill subcategory that have already installed control systems and completed initial or subsequent performance tests may comply with this subpart using the initial or most recent performance test conducted to comply with 40 CFR part 60, subpart WWW; subpart GGG of this part; or a state plan implementing subpart Cc of part 60, is sufficient for compliance with this subpart.

(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 must be controlled according to either paragraph (c)(1) or (2) of this section.

(4) All emissions from any atmospheric vent from the gas treatment system are subject to the requirements of paragraph (b) or (c) of this section. For purposes of this subpart, atmospheric vents located on the condensate storage tank are not part of the treatment system and are exempt from the requirements of paragraph (b) or (c) of this section.

(d) *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 must submit an initial design capacity report to the Administrator as provided in § 62.16724(a). The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. Any density conversions must be documented and submitted with the report. Submittal of the initial design capacity report fulfills the requirements of this subpart except as provided in paragraphs (d)(1) and (2) of this section.

(1) The owner or operator must submit an amended design capacity report as provided in § 62.16724(b).

(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 and 2.5 million cubic meters, the owner or operator must comply with paragraph (e) of this section.

(e) *Emissions.* The owner or operator of an MSW landfill having a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters must either install a collection and control system as provided in paragraphs (b) and (c) of this section or calculate an initial NMOC emission rate for the landfill using the procedures specified in § 62.16718(a). The NMOC emission rate must be recalculated annually, except as provided in § 62.16724(c)(3).

(1) If the calculated NMOC emission rate is less than 34 megagrams per year, the owner or operator must:

(i) Submit an annual NMOC emission rate report according to § 62.16724(c), except as provided in § 62.16724(c)(3); and

(ii) Recalculate the NMOC emission rate annually using the procedures specified in § 62.16724(a) until such time as the calculated NMOC emission rate is equal to or greater than 34 megagrams per year, or the landfill is closed.

(A) If the calculated NMOC emission rate, upon initial calculation or annual recalculation required in paragraph (e)(1)(ii) of this section, is equal to or greater than 34 megagrams per year, the owner or operator must either: Comply with paragraphs (b) and (c) of this section; calculate NMOC emissions using the next higher tier in § 62.16718; or conduct a surface emission monitoring demonstration using the procedures specified in § 62.16718(a)(6).

(B) If the landfill is permanently closed, a closure report must be submitted to the Administrator as provided in § 62.16724(f), except for exemption allowed under § 62.16711(g)(4).

(2) If the calculated NMOC emission rate is equal to or greater than 34 megagrams per year using Tier 1, 2, or 3 procedures, the owner or operator must either: Submit a collection and control system design plan prepared by a professional engineer to the Administrator within 1 year as specified in § 62.16724(d), except for exemptions allowed under § 62.16711(g)(3); calculate NMOC emissions using a

higher tier in § 62.16718; or conduct a surface emission monitoring demonstration using the procedures specified in § 62.16718(a)(6).

(3) For the closed landfill subcategory, if the calculated NMOC emission rate submitted under previously applicable regulations 40 CFR part 60, subpart WWW; 40 CFR part 62, subpart GGG; or a state plan implementing 40 CFR part 60, subpart Cc is equal to or greater than 50 megagrams per year using Tier 1, 2, or 3 procedures, the owner or operator must either: submit a collection and control system design plan as specified in § 62.16724(d), except for exemptions allowed under § 62.16711(g)(3); or calculate NMOC emissions using a higher tier in § 62.16718.

(f) *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 § 62.16730). A closure report must be submitted to the Administrator as provided in § 62.16724(f).

(2) The collection and control system has been in operation a minimum of 15 years or the landfill owner or operator demonstrates that the gas collection and control system will be unable to operate for 15 years due to declining gas flow.

(3) Following the procedures specified in § 62.16718(b), the calculated NMOC emission rate at the landfill is less than 34 megagrams per year on three successive test dates. The test dates must be no less than 90 days apart, and no more than 180 days apart.

(4) For the closed landfill subcategory (as defined in § 62.16730), following the procedures specified in § 62.16718(b), the calculated NMOC emission rate at the landfill is less than 50 megagrams per year on three successive test dates. The test dates must be no less than 90 days apart, and no more than 180 days apart.

§ 62.16716 Operational standards for collection and control systems.

Each owner or operator must comply with the provisions for the operational standards in this section (as well as the provisions in §§ 62.16720 and 62.16722), or the operational standards in § 63.1958 of this chapter (as well as the provisions in §§ 63.1960 and 63.1961 of this chapter), or both as alternative means of compliance, for an MSW landfill with a gas collection and control system used to comply with the provisions of § 62.16714(b) and (c). Once the owner or operator begins to comply with the provisions of § 63.1958 of this chapter, the owner or operator must continue to operate the collection and control device according to those provisions and cannot return to the provisions of this section. Each owner or operator of an MSW landfill with a gas collection and control system used to comply with the provisions of § 62.16714(b) and (c) must:

(a) Operate the collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for:

(1) 5 years or more if active; or

(2) 2 years or more if closed or at final grade;

(b) Operate the collection system with negative pressure at each wellhead except under the following conditions:

(1) A fire or increased well temperature. The owner or operator must record instances when positive pressure occurs in efforts to avoid a fire. These records must be submitted with the annual reports as provided in § 62.16724(h)(1);

(2) Use of a geomembrane or synthetic cover. The owner or operator must develop acceptable pressure limits in the design plan;

(3) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes must be approved by the Administrator as specified in § 62.16724(d);

(c) Operate each interior wellhead in the collection system with a landfill gas temperature less than 55 degrees Celsius (131 degrees Fahrenheit). The owner or operator may establish a higher operating temperature value at a particular well. A higher operating value demonstration must be submitted to the Administrator for approval and must include supporting data demonstrating that the elevated parameter neither causes fires nor significantly inhibits anaerobic decomposition by killing methanogens. The demonstration must satisfy both criteria in order to be approved (*i.e.,* neither causing fires nor killing methanogens is acceptable).

(d) Operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator must conduct surface testing using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in § 62.16720(d). The owner or operator must conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at no more than 30-meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover and all cover penetrations. Thus, the owner or operator must monitor any openings that are within an area of the landfill where waste has been placed and a gas collection system is required. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan must be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30-meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing.

(e) Operate the system such that all collected gases are vented to a control system designed and operated in compliance with § 62.16714(c). In the event the collection or control system is not operating, the gas mover system must be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere must be closed within 1 hour of the collection or control system not operating.

(f) Operate the control system at all times when the collected gas is routed to the system.

(g) If monitoring demonstrates that the operational requirements in paragraphs (b), (c), or (d) of this section are not met, corrective action must be taken as specified in § 62.16720(a)(3) and (5) or § 62.16720(c). If corrective actions are taken as specified in § 62.16720, the monitored exceedance is not a violation of the operational requirements in this section.

§ 62.16718 Test methods and procedures.

Calculate the landfill NMOC emission rate and conduct a surface emission monitoring demonstration according to the provisions in this section.

(a)(1) *NMOC Emission rate.* The landfill owner or operator must calculate the NMOC emission rate using either Equation 1 provided in paragraph (a)(1)(i) of this section or Equation 2 provided in paragraph (a)(1)(ii) of this section. Both Equation 1 and Equation 2 may be used if the actual year-to-year solid waste acceptance rate is known, as specified in paragraph (a)(1)(i) of this section, for part of the life of the landfill and the actual year-to-year solid waste acceptance rate is unknown, as specified in paragraph (a)(1)(ii) of this section, for part of the life of the landfill. The values to be used in both Equation 1 and Equation 2 are 0.05 per year for k, 170 cubic meters per megagram for Lo, and 4,000 parts per million by volume as hexane for the

C_{NMOC}. For landfills located in geographical areas with a 30-year annual average precipitation of less than 25 inches, as measured at the nearest representative official meteorological site, the k value to be used is 0.02 per year.

(i)(A) Equation 1 must be used if the actual year-to-year solid waste acceptance rate is known.

$$M_{NMOC} = \sum_{i=1}^{n} 2\ k\ L_o M_i (e^{-kt_i})(C_{NMOC})(3.6\times10^{-9}) \quad \text{(Eq. 1)}$$

Where:

M_{NMOC} = Total NMOC emission rate from the landfill, megagrams per year.
k = Methane generation rate constant, $year^{-1}$.
L_o = Methane generation potential, cubic meters per megagram solid waste.
M_i = Mass of solid waste in the i^{th} section, megagrams.
t_i = Age of the i^{th} section, years.
C_{NMOC} = Concentration of NMOC, parts per million by volume as hexane.
3.6×10^{-9} = Conversion factor.

(B) The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for M_i if documentation of the nature and amount of such wastes is maintained.

(ii)(A) Equation 2 must be used if the actual year-to-year solid waste acceptance rate is unknown.

$$M_{NMOC} = 2L_o R\ (e^{-kc} - e^{-kt})\ C_{NMOC}(3.6\times10^{-9}) \quad \text{(Eq. 2)}$$

Where:

M_{NMOC} = Mass emission rate of NMOC, megagrams per year.
L_o = Methane generation potential, cubic meters per megagram solid waste.
R = Average annual acceptance rate, megagrams per year.
k = Methane generation rate constant, $year^{-1}$.
t = Age of landfill, years.
C_{NMOC} = Concentration of NMOC, parts per million by volume as hexane.
c = Time since closure, years; for an active landfill c = 0 and $e^{-kc} = 1$.
3.6×10^{-9} = Conversion factor.

(B) The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value of R, if documentation of the nature and amount of such wastes is maintained.

(2) *Tier 1.* The owner or operator must compare the calculated NMOC mass emission rate to the standard of 34 megagrams per year.

(i) If the NMOC emission rate calculated in paragraph (a)(1) of this section is less than 34 megagrams per year, then the owner or operator must submit an NMOC emission rate report according to § 62.16724(c) and must recalculate the NMOC mass emission rate annually as required under § 62.16714(e).

(ii) If the NMOC emission rate calculated in paragraph (a)(1) of this section is equal to or greater than 34 megagrams per year, then the landfill owner or operator must either:

(A) Submit a gas collection and control system design plan within 1 year as specified in § 62.16724(d) and install and operate a gas collection and control system within 30 months according to § 62.16714(b) and (c);

(B) Determine a site-specific NMOC concentration and recalculate the NMOC emission rate using the Tier 2 procedures provided in paragraph (a)(3) of this section; or

(C) Determine a site-specific methane generation rate constant and recalculate the NMOC emission rate using the Tier 3 procedures provided in paragraph (a)(4) of this section.

(3) *Tier 2.* The landfill owner or operator must determine the site-specific NMOC concentration using the following sampling procedure. The landfill owner or operator must install at least two sample probes per hectare, evenly distributed over the landfill surface that has retained waste for at least 2 years. If the landfill is larger than 25 hectares in area, only 50 samples are required. The probes should be evenly distributed across the sample area. The sample probes should be located to avoid known areas of nondegradable solid waste. The owner or operator must collect and analyze one sample of landfill gas from each probe to determine the NMOC concentration using EPA Method 25 or 25C of appendix A–7 of 40 CFR part 60. Taking composite samples from different probes into a single cylinder is allowed; however, equal sample volumes must be taken from each probe. For each composite, the sampling rate, collection times, beginning and ending cylinder vacuums, or alternative volume measurements must be recorded to verify that composite volumes are equal. Composite sample volumes should not be less than one liter unless evidence can be provided to substantiate the accuracy of smaller volumes. Terminate compositing before the cylinder approaches ambient pressure where measurement accuracy diminishes. If more than the required number of samples is taken, all samples must be used in the analysis. The landfill owner or operator must divide the NMOC concentration from EPA Method 25 or 25C of appendix A–7 of 40 CFR part 60 by 6 to convert from C_{NMOC} as carbon to C_{NMOC} as hexane. If the landfill has an active or passive gas removal system in place, EPA Method 25 or 25C samples may be collected from these systems instead of surface probes provided the removal system can be shown to provide sampling as representative as the two sampling probes per hectare requirement. For active collection systems, samples may be collected from the common header pipe. The sample location on the common header pipe must be before any gas moving, condensate removal, or treatment system equipment. For active collection systems, a minimum of three samples must be collected from the header pipe.

(i) Within 60 days after the date of determining the NMOC concentration and corresponding NMOC emission rate, the owner or operator must submit the results according to § 62.16724(j)(2).

(ii) The landfill owner or operator must recalculate the NMOC mass emission rate using Equation 1 or Equation 2 provided in paragraph (a)(1)(i) or (ii) of this section using the average site-specific NMOC concentration from the collected samples instead of the default value provided in paragraph (a)(1) of this section.

(iii) If the resulting NMOC mass emission rate is less than 34 megagrams per year, then the owner or operator must submit a periodic estimate of NMOC emissions in an NMOC emission rate report according to § 62.16724(c) and must recalculate the NMOC mass emission rate annually as required under § 62.16714(e). The site-specific NMOC concentration must be retested every 5 years using the methods specified in this section.

(iv) If the NMOC mass emission rate as calculated using the Tier 2 site-specific NMOC concentration is equal to or greater than 34 megagrams per year, the owner or operator must either:

(A) Submit a gas collection and control system design plan within 1 year as specified in § 62.16724(d) and install and operate a gas collection and control system within 30 months according to § 62.16714(b) and (c);

(B) Determine a site-specific methane generation rate constant and recalculate the NMOC emission rate using the site-specific methane generation rate using the Tier 3 procedures specified in paragraph (a)(4) of this section; or

(C) Conduct a surface emission monitoring demonstration using the Tier 4 procedures specified in paragraph (a)(6) of this section.

(4) *Tier 3.* The site-specific methane generation rate constant must be determined using the procedures provided in EPA Method 2E of appendix A–1 of 40 CFR part 60. The landfill owner or operator must estimate the NMOC mass emission rate using Equation 1 or Equation 2 in paragraph (a)(1)(i) or (ii) of this section and using a site-specific methane generation rate constant, and the site-specific NMOC concentration as determined in paragraph (a)(3) of this section instead of the default values provided in paragraph (a)(1) of this section. The landfill owner or operator must compare the resulting NMOC mass emission rate to the standard of 34 megagrams per year.

(i) If the NMOC mass emission rate as calculated using the Tier 2 site-specific NMOC concentration and Tier 3 site-specific methane generation rate is equal to or greater than 34 megagrams per year, the owner or operator must either:

(A) Submit a gas collection and control system design plan within 1 year as specified in § 62.16724(d) and install and operate a gas collection and control system within 30 months according to § 62.16714(b) and (c); or

(B) Conduct a surface emission monitoring demonstration using the Tier 4 procedures specified in paragraph (a)(6) of this section.

(ii) If the NMOC mass emission rate is less than 34 megagrams per year, then the owner or operator must recalculate the NMOC mass emission rate annually using Equation 1 or Equation 2 in paragraph (a)(1) of this section and using the site-specific Tier 2 NMOC concentration and Tier 3 methane generation rate constant and submit a periodic NMOC emission rate report as provided in § 62.16724(c). The calculation of the methane generation rate constant is performed only once, and the value obtained from this test must be used in all subsequent annual NMOC emission rate calculations.

(5) *Alternative methods.* The owner or operator may use other methods to determine the NMOC concentration or a site-specific methane generation rate constant as an alternative to the methods required in paragraphs (a)(3) and (4) of this section if the method has been approved by the Administrator.

(6) *Tier 4.* Demonstrate that surface methane emissions are below 500 parts per million. Surface emission monitoring must be conducted on a quarterly basis using the following procedures. Tier 4 is allowed only if the landfill owner or operator can demonstrate that NMOC emissions are greater than or equal to 34 megagrams per year but less than 50 megagrams per year using Tier 1 or Tier 2. If both Tier 1 and Tier 2 indicate NMOC emissions are megagrams per year or greater, then Tier 4 cannot be used. In addition, the landfill must meet the criteria in paragraph (a)(6)(viii) of this section.

(i) Measure surface concentrations of methane along the entire perimeter of the landfill and along a pattern that traverses the landfill at no more than 30-meter intervals using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in § 62.16720(d).

(ii) The background concentration must be determined by moving the probe inlet upwind and downwind at least 30 meters from the waste mass boundary of the landfill.

(iii) Surface emission monitoring must be performed in accordance with section 8.3.1 of EPA Method 21 of appendix A–7 of 40 CFR part 60, except that the probe inlet must be placed no more than 5 centimeters above the landfill surface; the constant measurement of distance above the surface should be based on a mechanical device such as with a wheel on a pole.

(A) The owner or operator must use a wind barrier, similar to a funnel, when onsite average wind speed exceeds 4 miles per hour or 2 meters per second or gust exceeding 10 miles per hour. Average on-site wind speed must also be determined in an open area at 5-minute intervals using an on-site anemometer with a continuous recorder and data logger for the entire duration of the monitoring event. The wind barrier must surround the SEM monitor, and must be placed on the ground, to ensure wind turbulence is blocked. The SEM cannot be conducted if average wind speed exceeds 25 miles per hour.

(B) Landfill surface areas where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover, and all cover penetrations must also be monitored using a device meeting the specifications provided in § 62.16720(d).

(iv) Each owner or operator seeking to comply with the Tier 4 provisions in paragraph (a)(6) of this section must maintain records of surface emission monitoring as provided in § 62.16726(g) and submit a Tier 4 surface emissions report as provided in § 62.16724(d)(4)(iii).

(v) If there is any measured concentration of methane of 500 parts per million or greater from the surface of the landfill, the owner or operator must submit a gas collection and control system design plan within 1 year of the first measured concentration of methane of 500 parts per million or greater from the surface of the landfill according to § 62.16724(d) and install and operate a gas collection and control system according to § 62.16714(b) and (c) within 30 months of the most recent NMOC emission rate report in which the NMOC emission rate equals or exceeds 34 megagrams per year based on Tier 2.

(vi) If after four consecutive quarterly monitoring periods at a landfill, other than a closed landfill, there is no measured concentration of methane of 500 parts per million or greater from the surface of the landfill, the owner or operator must continue quarterly surface emission monitoring using the methods specified in this section.

(vii) If after four consecutive quarterly monitoring periods at a closed landfill there is no measured concentration of methane of 500 parts per million or greater from the surface of the landfill, the owner or operator must conduct annual surface emission monitoring using the methods specified in this section.

(viii) If a landfill has installed and operates a collection and control system that is not required by this subpart, then the collection and control system must meet the following criteria:

(A) The gas collection and control system must have operated for at least 6,570 out of 8,760 hours preceding the Tier 4 SEM demonstration.

(B) During the Tier 4 SEM demonstration, the gas collection and control system must operate as it normally would to collect and control as much landfill gas as possible.

(b) After the installation and startup of a collection and control system in compliance with this subpart, the owner or operator must calculate the NMOC emission rate for purposes of determining when the system can be capped, removed, or decommissioned as provided in § 62.16714(f), using Equation 3:

$$M_{NMOC} = 1.89 \times 10^{-3} Q_{LFG} C_{NMOC} \quad \text{(Eq. 3)}$$

Where:

M_{NMOC} = Mass emission rate of NMOC, megagrams per year.

Q_{LFG} = Flow rate of landfill gas, cubic meters per minute.

C_{NMOC} = NMOC concentration, parts per million by volume as hexane.

(1) *Flow rate.* The flow rate of landfill gas, $Q_{LFG,}$ must be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the control system using a gas flow measuring device calibrated according to the provisions of section 10 of EPA Method 2E of appendix A–1 of 40 CFR part 60.

(2) *NMOC concentration.* The average NMOC concentration, $C_{NMOC,}$ must be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in EPA Method 25 or EPA Method 25C of appendix A–7 of 40 CFR part 60. The sample location on the common header pipe must be before any condensate removal or other gas refining units. The landfill owner or operator must divide the NMOC concentration from EPA Method 25 or EPA Method 25C of appendix A–7 of 40 CFR part 60 by six to convert from C_{NMOC} as carbon to C_{NMOC} as hexane.

(3) *Gas flow rate method.* The owner or operator may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Administrator.

(i) Within 60 days after the date of calculating the NMOC emission rate for purposes of determining when the system can be capped or removed, the owner or operator must submit the results according to § 62.16724(j)(2).

(ii) [Reserved]

(c) When calculating emissions for Prevention of Significant Deterioration purposes, the owner or operator of each MSW landfill subject to the provisions of this subpart must estimate the NMOC emission rate for comparison to the Prevention of Significant Deterioration major source and significance levels in §§ 51.166 or 52.21 of this chapter using Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources (AP–42) or other approved measurement procedures.

(d) For the performance test required in § 62.16714(c)(1), the net heating value of the combusted landfill gas as determined in 40 CFR 60.18(f)(3) of this chapter is calculated from the concentration of methane in the landfill gas as measured by EPA Method 3C. A minimum of three 30-minute EPA Method 3C samples are determined. The measurement of other organic components, hydrogen, and carbon monoxide is not applicable. EPA Method 3C may be used to determine the landfill gas molecular weight for calculating the flare gas exit velocity under 40 CFR 60.18(f)(4) of this chapter.

(1) *Performance test results.* Within 60 days after the date of completing each performance test (as defined in § 60.8 of this chapter), the owner or operator must submit the results of the performance tests required by paragraph (b) or (d) of this section, including any associated fuel analyses, according to § 62.16724(j)(1).

(2) [Reserved]

(e) For the performance test required in § 62.16714(c)(2), EPA Method 25 or 25C (EPA Method 25C may be used at the inlet only) of appendix A–7 of 40 CFR part 60 must be used to determine compliance with the 98 weight-percent efficiency or the 20 parts-per-million by volume outlet NMOC concentration level, unless another method to demonstrate compliance has been approved by the Administrator as provided by § 62.16724(d)(2). EPA Method 3, 3A, or 3C of appendix A–2 of 40 CFR part 60 must be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 parts-per-million NMOC as carbon (8 parts-per-million NMOC as hexane), EPA Method 25A should be used in place of EPA Method 25. EPA Method 18 of appendix A–6 of 40 CFR part 60 may be used in conjunction with EPA Method 25A on a limited basis (compound specific, *e.g.,* methane) or EPA Method 3C may be used to determine methane. The methane as carbon should be subtracted from the EPA Method 25A total hydrocarbon value as carbon to give NMOC concentration as carbon. The landfill owner or operator must divide the NMOC concentration as carbon by 6 to convert the C_{NMOC} as carbon to C_{NMOC} as hexane. Equation 4 must be used to calculate efficiency:

$$\text{Control Efficiency} = (NMOC_{in} - NMOC_{out}) / (NMOC_{in}) \quad \text{(Eq. 4)}$$

Where:

$NMOC_{in}$ = Mass of NMOC entering control device.

$NMOC_{out}$ = Mass of NMOC exiting control device.

(1) *Performance test submission.* Within 60 days after the date of completing each performance test (as defined in§ 60.8 of this chapter), the owner or operator must submit the results of the performance tests, including any associated fuel analyses, according to § 62.16724(j)(1).

(2) [Reserved]

§ 62.16720 Compliance provisions.

Follow the compliance provisions in this section (as well as the provisions in §§ 62.16716 and 62.16722), or the compliance provisions in § 63.1960 of this chapter (as well as the provisions in §§ 63.1958 and 63.1961 of this chapter), or both as alternative means of compliance, for an MSW landfill with a gas collection and control system used to comply with the provisions of § 62.16714(b) and (c). Once the owner or operator begins to comply with the provisions of § 63.1960 of this chapter, the owner or operator must continue to operate the collection and control device according to those provisions and cannot return to the provisions of this section.

(a) Except as provided in § 62.16724(d)(2), the specified methods in paragraphs (a)(1) through (6) of this section must be used to determine whether the gas collection system is in compliance with § 62.16714(b)(2).

(1) For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with § 62.16714(b)(2)(i), either Equation 5 or Equation 6 must be used. The methane generation rate constant (k) and methane generation potential (Lo) kinetic factors should be those published in the most recent AP–42 or other site-specific values demonstrated to be appropriate and approved by the Administrator. If k has been determined as specified in § 62.16718(a)(4), the value of k determined from the test must be used. A value of no more than 15 years must be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

(i) For sites with unknown year-to-year solid waste acceptance rate:

$$Q_m = 2L_oR(e^{-kc} - e^{-kt}) \quad \text{(Eq. 5)}$$

Where:

Q_m = Maximum expected gas generation flow rate, cubic meters per year.
L_o = Methane generation potential, cubic meters per megagram solid waste.
R = Average annual acceptance rate, megagrams per year.
k = Methane generation rate constant, year -1.
t = Age of the landfill at equipment installation plus the time the owner or operator intends to use the gas mover equipment or active life of the landfill, whichever is less. If the equipment is installed after closure, t is the age of the landfill at installation, years.
c = Time since closure, years (for an active landfill c = 0 and $e^{-kc} = 1$).

(ii) For sites with known year-to-year solid waste acceptance rate:

$$Q_M = \sum_{i-1}^{n} 2kL_oM_i(e^{-kt_i}) \quad \text{(Eq. 6)}$$

Where:

Q_M = Maximum expected gas generation flow rate, cubic meters per year.
k = Methane generation rate constant, year -1.
L_o = Methane generation potential, cubic meters per megagram solid waste.
M_i = Mass of solid waste in the i^{th} section, megagrams.
t_i = Age of the i^{th} section, years.

(iii) If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, Equation 5 or Equation 6 in paragraphs (a)(1)(i) and (ii) of this section. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using Equation 5 or Equation 6 in paragraphs (a)(1)(i) or (ii) of this section or other methods must be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment.

(2) For the purposes of determining sufficient density of gas collectors for compliance with § 62.16714(b)(2)(ii), the owner or operator must design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Administrator, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.

(3) For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with § 62.16714(b)(2)(iii), the owner or operator must measure gauge pressure in the gas collection header applied to each individual well monthly. If a positive pressure exists, action must be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under § 62.16716(b). Any attempted corrective measure must not cause exceedances of other operational or performance standards.

(i) If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement of positive pressure, the owner or operator must conduct a root cause analysis and correct the exceedance as soon as practicable, but not later than 60 days after positive pressure was first measured. The owner or operator must keep records according to § 62.16726(e)(3).

(ii) If corrective actions cannot be fully implemented within 60 days following the positive pressure or elevated temperature measurement for which the root cause analysis was required, the owner or operator must also conduct a corrective action analysis and develop an implementation schedule to complete the corrective action(s) as soon as practicable, but no more than 120 days following the measurement of landfill gas temperature greater than 55 degrees Celsius (131 degrees Fahrenheit) or positive pressure. The owner or operator must submit the items listed in § 62.16724(h)(7) as part of the next annual report. The owner or operator must keep records according to § 62.16726(e)(4).

(iii) If corrective action is expected to take longer than 120 days to complete after the initial exceedance, the owner or operator must submit the root cause analysis, corrective action analysis, and corresponding implementation timeline to the Administrator, according to § 62.16724(h)(7) and (k). The owner or operator must keep records according to § 62.16726(e)(5).

(4) For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator must monitor each well monthly for temperature as provided in § 62.16716(c). If a well exceeds the operating parameter for temperature, action must be initiated to correct the exceedance within 5 calendar days. Any attempted corrective measure must not cause exceedances of other operational or performance standards.

(i) If a landfill gas temperature less than 55 degrees Celsius (131 degrees Fahrenheit) cannot be achieved within 15 calendar days of the first measurement of landfill gas temperature greater than 55 degrees Celsius (131 degrees Fahrenheit), the owner or operator must conduct a root cause analysis and correct the exceedance as soon as practicable, but no later than 60 days after a landfill gas temperature greater than 55 degrees Celsius (131 degrees Fahrenheit) was first measured. The owner or operator must keep records according to § 62.16726(e)(3).

(ii) If corrective actions cannot be fully implemented within 60 days following the measurement of landfill gas temperature greater than 55 degrees Celsius (131 degrees Fahrenheit) for which the root cause analysis was required, the owner or operator must also conduct a corrective action analysis and develop an implementation schedule to complete the corrective action(s) as soon as practicable, but no more than 120 days following the measurement of landfill gas temperature greater than 55 degrees Celsius (131 degrees Fahrenheit). The owner or operator must submit the items listed in § 62.16724(h)(7) as part of the next annual report. The owner or operator must keep records according to § 62.16726(e)(4).

(iii) If corrective action is expected to take longer than 120 days to complete after the initial exceedance, the owner or operator must submit the root cause analysis, corrective action analysis, and corresponding implementation timeline to the Administrator, according to § 62.16724(h)(7) and § 62.16724(k). The owner or operator must keep records according to § 62.16726(e)(5).

(5) An owner or operator seeking to demonstrate compliance with § 62.16714(b)(2)(iv) through the use of a collection system not conforming to the specifications provided in § 62.16728 must provide information satisfactory to the Administrator as specified in § 62.16724(d)(3) demonstrating that off-site migration is being controlled.

(b) For purposes of compliance with § 62.16716(a), each owner or operator of a controlled landfill must place each well or design component as specified in the approved design plan as provided in § 62.16724(d). Each well must be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of:

(1) 5 years or more if active; or

(2) 2 years or more if closed or at final grade.

(c) The following procedures must be used for compliance with the surface methane operational standard as provided in § 62.16716(d):

(1) After installation and startup of the gas collection system, the owner or operator must monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at no more than 30-meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in paragraph (d) of this section.

(2) The background concentration must be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.

(3) Surface emission monitoring must be performed in accordance with section 8.3.1 of EPA Method 21 of appendix A–7 of 40 CFR part 60, except that the probe inlet must be placed within 5 to 10 centimeters of the ground. Monitoring must be performed during typical meteorological conditions.

(4) Any reading of 500 parts per million or more above background at any location must be recorded as a monitored exceedance and the actions specified in paragraphs (c)(4)(i) through (v) of this section must be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of § 62.16716(d).

(i) The location of each monitored exceedance must be marked, and the location and concentration recorded. For location, you must determine the latitude and longitude coordinates using an instrument with an accuracy of at least 4 meters. The coordinates must be in decimal degrees with at least five decimal places.

(ii) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance must be made and the location must be re-monitored within 10 calendar days of detecting the exceedance.

(iii) If the re-monitoring of the location shows a second exceedance, additional corrective action must be taken, and the location must be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in paragraph (c)(4)(v) of this section must be taken, and no further monitoring of that location is required until the action specified in paragraph (c)(4)(v) of this section has been taken.

(iv) Any location that initially showed an exceedance but has a methane concentration less than 500 parts-per-million methane above background at the 10-day re-monitoring specified in paragraph (c)(4)(ii) or (iii) of this section must be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration less than 500 parts-per-million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month re-monitoring shows an exceedance, the actions specified in paragraph (c)(4)(iii) or (v) of this section must be taken.

(v) For any location where monitored methane concentration equals or exceeds 500 parts-per-million above background three times within a quarterly period, a new well or other collection device must be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Administrator for approval.

(5) The owner or operator must implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.

(d) Each owner or operator seeking to comply with the provisions in paragraph (c) of this section or § 62.16718(a)(6) must comply with the following instrumentation specifications and procedures for surface emission monitoring devices:

(1) The portable analyzer must meet the instrument specifications provided in section 6 of EPA Method 21 of appendix A–7 of 40 CFR part 60, except that ''methane'' replaces all references to ''VOC.''

(2) The calibration gas must be methane, diluted to a nominal concentration of 500 parts-per-million in air.

(3) To meet the performance evaluation requirements in section 8.1 of EPA Method 21 of appendix A–7 of 40 CFR part 60, the instrument evaluation procedures of section 8.1 of EPA Method 21 of appendix A–7 of 40 CFR part 60 must be used.

(4) The calibration procedures provided in sections 8 and 10 of EPA Method 21 of appendix A–7 of 40 CFR part 60 must be followed immediately before commencing a surface monitoring survey.

(e) The provisions of this subpart apply at all times, including periods of startup, shutdown, or malfunction. During periods of startup, shutdown, and malfunction, you must comply with the work practice specified in § 62.16716(e) in lieu of the compliance provisions in § 62.16720.

§ 62.16722 Monitoring of operations.

Follow the monitoring provisions in this section (as well as the provisions in §§ 62.16716 and 62.16720), except as provided in § 62.16724(d)(2), or the monitoring provisions in § 63.1961 of this chapter (as well as the provisions in §§ 63.1958 and 63.1960 of this chapter), or both as alternative means of compliance, for an MSW landfill with a gas collection and control system used

to comply with the provisions of § 62.16714(b) and (c). Once the owner or operator begins to comply with the provisions of § 63.1961 of this chapter, the owner or operator must continue to operate the collection and control device according to those provisions and cannot return to the provisions of this section.

(a) Each owner or operator seeking to comply with § 62.16714(b)(2) for an active gas collection system must install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead and:

(1) Measure the gauge pressure in the gas collection header on a monthly basis as provided in § 62.16720(a)(3); and

(2) Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as follows:

(i) The nitrogen level must be determined using EPA Method 3C of appendix A–2 of 40 CFR part 60, unless an alternative test method is established as allowed by § 62.16724(d)(2).

(ii) Unless an alternative test method is established as allowed by § 62.16724(d)(2), the oxygen level must be determined by an oxygen meter using EPA Method 3A of appendix A–7 of 40 CFR part 60, EPA Method 3C of appendix A–7 of 40 CFR part 60, or ASTM D6522–11. Determine the oxygen level by an oxygen meter using EPA Method 3A, 3C, or ASTM D6522–11 (if sample location is prior to combustion) except that:

(A) The span must be set between 10- and 12-percent oxygen;

(B) A data recorder is not required;

(C) Only two calibration gases are required, a zero and span;

(D) A calibration error check is not required;

(E) The allowable sample bias, zero drift, and calibration drift are ±10 percent.

(iii) A portable gas composition analyzer may be used to monitor the oxygen levels provided:

(A) The analyzer is calibrated; and

(B) The analyzer meets all quality assurance and quality control requirements for EPA Method 3A or ASTM D6522–11.

(3) Monitor temperature of the landfill gas on a monthly basis as provided in § 62.16720(a)(4). The temperature measuring device must be calibrated annually using the procedure in 40 CFR part 60, appendix A–1, EPA Method 2, section 10.3.

(b) Each owner or operator seeking to comply with § 62.16714(c) using an enclosed combustor must calibrate, maintain, and operate according to the manufacturer's specifications, the following equipment:

(1) A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 degrees Celsius, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity equal to or greater than 44 megawatts.

(2) A device that records flow to the control device and bypass of the control device (if applicable). The owner or operator must:

(i) Install, calibrate, and maintain a gas flow rate measuring device that must record the flow to the control device at least every 15 minutes; and

(ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism must be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

(c) Each owner or operator seeking to comply with § 62.16714(c) using a non-enclosed flare must install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:

(1) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.

(2) A device that records flow to the flare and bypass of the flare (if applicable). The owner or operator must:

(i) Install, calibrate, and maintain a gas flow rate measuring device that records the flow to the control device at least every 15 minutes; and

(ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism must be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

(d) Each owner or operator seeking to demonstrate compliance with § 62.16714(c) using a device other than a non-enclosed flare or an enclosed combustor or a treatment system must provide information satisfactory to the Administrator as provided in § 62.16724(d)(2) describing the operation of the control device, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Administrator must review the information and either approve it, or request that additional information be submitted. The Administrator may specify additional appropriate monitoring procedures.

(e) Each owner or operator seeking to install a collection system that does not meet the specifications in § 62.16728 or seeking to monitor alternative parameters to those required by § 62.16716 through § 62.16722 must provide information satisfactory to the Administrator as provided in § 62.16724(d)(2) and (3) describing the design and operation of the collection system, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Administrator may specify additional appropriate monitoring procedures.

(f) Each owner or operator seeking to demonstrate compliance with the 500 parts-per-million surface methane operational standard in § 62.16716(d) must monitor surface concentrations of methane according to the procedures provided in § 62.16720(c) and the instrument specifications in § 62.16720(d). Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 parts-per-million or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.

(g) Each owner or operator seeking to demonstrate compliance with the control system requirements in § 62.16714(c) using a landfill gas treatment system must maintain and operate all monitoring systems associated with the treatment system in accordance with the site-specific treatment system monitoring plan required in § 62.16726(b)(5)(ii) and must calibrate, maintain, and operate according to the manufacturer's specifications a device that records flow to the treatment system and bypass of the treatment system (if applicable). The owner or operator must:

(1) Install, calibrate, and maintain a gas flow rate measuring device that records the flow to the treatment system at least every 15 minutes; and

(2) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism must be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

(h) The monitoring requirements of paragraphs (b), (c), (d), and (g) of this section apply at all times the designated facility is operating, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to complete monitoring system repairs in response to monitoring system malfunctions and to return the monitoring system to operation as expeditiously as practicable.

(i) Incorporation by reference required material.

(1) The material required by this section was approved for incorporation by reference into this section by the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. You may inspect approved material at the EPA Docket Center, WJC West Building, Room Number 3334, 1301 Constitution Ave. NW, Washington, DC, (202) 566–1744, Docket ID No. EPA–HQ–OAR–2019–0338 and obtain it from the source(s) listed below. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fedreg.legal@nara.gov,* or go to *www.archives.gov/federal-register/cfr/ibr-locations.html.*

(2) ASTM International, 100 Barr Harbor Drive, P.O. Box CB700, West Conshohocken, Pennsylvania 19428–2959, (800) 262–1373, *www.astm.org.*

(i) ASTM D6522–11 Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers, approved December 1, 2011.

(ii) [Reserved]

§ 62.16724 Reporting guidelines.

Follow the reporting provisions listed in this section, as applicable, except as provided under 40 CFR 60.24 and §§ 62.16711(g), (h), and 62.16724(d)(2).

(a) *Design capacity report.* Submit the initial design capacity report no later than September 20, 2021. The initial design capacity report must contain the following information:

(1) A map or plot of the landfill, providing the size and location of the landfill, and identifying all areas where solid waste may be landfilled according to the permit issued by the state, local, or tribal agency responsible for regulating the landfill.

(2) The maximum design capacity of the landfill. Where the maximum design capacity is specified in the permit issued by the state, local, or tribal agency responsible for regulating the landfill, a copy of the permit specifying the maximum design capacity may be submitted as part of the report. If the maximum design capacity of the landfill is not specified in the permit, the maximum design capacity must be calculated using good engineering practices. The calculations must be provided, along with the relevant parameters as part of the report. The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. If the owner or operator chooses to convert the design capacity from volume to mass or from mass to volume to demonstrate its design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, the calculation must include a site-specific density, which must be recalculated annually. Any density conversions must be documented and submitted with the design capacity report. The state, local, or tribal agency or the Administrator may request other reasonable information as may be necessary to verify the maximum design capacity of the landfill.

(b) *Amended design capacity report.* An amended design capacity report must be submitted providing notification of an increase in the design capacity of the landfill, within 90 days of an increase in the maximum design capacity of the landfill to meet or exceed 2.5 million megagrams and 2.5 million cubic meters. This increase in design capacity may result from an increase in the permitted volume of the landfill or an increase in the density as documented in the annual recalculation required in § 62.16726(f).

(c) *NMOC emission rate report.* For existing MSW landfills covered by this subpart with a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, the NMOC emission rate report must be submitted following the procedure specified in paragraph (j)(2) of this section no later than 90 days after the effective date of this subpart. The NMOC emission rate report must be submitted to the Administrator annually following the procedure specified in paragraph (j)(2) of this section, except as provided for in paragraph (c)(3) of this section. The Administrator may request such additional information as may be necessary to verify the reported NMOC emission rate.

(1) The NMOC emission rate report must contain an annual or 5-year estimate of the NMOC emission rate calculated using the formula and procedures provided in § 62.16718(a) or (b), as applicable.

(2) The NMOC emission rate report must include all the data, calculations, sample reports and measurements used to estimate the annual or 5-year emissions.

(3) If the estimated NMOC emission rate as reported in the annual report to the Administrator is less than 34 megagrams per year in each of the next 5 consecutive years, the owner or operator may elect to submit, following the procedure specified in paragraph (j)(2) of this section, an estimate of the NMOC emission rate for the next 5-year period in lieu of the annual report. This estimate must include the current amount of solid waste-in-place and the estimated waste acceptance rate for each year of the 5 years for which an NMOC emission rate is estimated. All data and calculations upon which this estimate is based must be provided to the Administrator. This estimate must be revised at least once every 5 years. If the actual waste acceptance rate exceeds the estimated waste acceptance rate in any year reported in the 5-year estimate, a revised 5-year estimate must be submitted to the Administrator. The revised estimate must cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate.

(4) Each owner or operator subject to the requirements of this subpart is exempted from the requirements to submit an NMOC emission rate report, after installing a collection and control system that complies with § 62.16714(b) and (c), during such time as the collection and control system is in operation and in compliance with §§ 62.16716 and 62.16720.

(d) *Collection and control system design plan.* The collection and control system design plan must be prepared and approved by a professional engineer and must meet the following requirements:

(1) The collection and control system as described in the design plan must meet the design requirements in § 62.16714(b) and (c).

(2) The collection and control system design plan must include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping, or reporting provisions

of §§ 62.16716 through 62.16726 proposed by the owner or operator.

(3) The collection and control system design plan must either conform to specifications for active collection systems in § 62.16728 or include a demonstration to the Administrator's satisfaction of the sufficiency of the alternative provisions to § 62.16728.

(4) Each owner or operator of an MSW landfill having a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters must submit a copy of the collection and control system design plan cover page that contains the engineer's seal to the Administrator within 1 year of the first NMOC emission rate report in which the NMOC emission rate equals or exceeds 34 megagrams per year, except as follows:

(i) If the owner or operator elects to recalculate the NMOC emission rate after Tier 2 NMOC sampling and analysis as provided in § 62.16718(a)(3) and the resulting rate is less than 34 megagrams per year, annual periodic reporting must be resumed, using the Tier 2 determined site-specific NMOC concentration, until the calculated NMOC emission rate is equal to or greater than 34 megagrams per year or the landfill is closed. The revised NMOC emission rate report, with the recalculated NMOC emission rate based on NMOC sampling and analysis, must be submitted, following the procedures in paragraph (j)(2) of this section, within 180 days of the first calculated exceedance of 34 megagrams per year.

(ii) If the owner or operator elects to recalculate the NMOC emission rate after determining a site-specific methane generation rate constant k, as provided in Tier 3 in § 62.16718(a)(4), and the resulting NMOC emission rate is less than 34 megagrams per year, annual periodic reporting must be resumed. The resulting site-specific methane generation rate constant k must be used in the NMOC emission rate calculation until such time as the emissions rate calculation results in an exceedance. The revised NMOC emission rate report based on the provisions of § 62.16718(a)(4) and the resulting site-specific methane generation rate constant k must be submitted, following the procedure specified in paragraph (j)(2) of this section, to the Administrator within 1 year of the first calculated NMOC emission rate equaling or exceeding 34 megagrams per year.

(iii) If the owner or operator elects to demonstrate that site-specific surface methane emissions are below 500 parts-per-million methane, based on the provisions of § 62.16718(a)(6), then the owner or operator must submit annually a Tier 4 surface emissions report as specified in this paragraph following the procedure specified in paragraph (j)(2) of this section until a surface emissions reading of 500 parts-per-million methane or greater is found. If the Tier 4 surface emissions report shows no surface emissions readings of 500 parts-per-million methane or greater for four consecutive quarters at a closed landfill, then the landfill owner or operator may reduce Tier 4 monitoring from a quarterly to an annual frequency. The Administrator may request such additional information as may be necessary to verify the reported instantaneous surface emission readings. The Tier 4 surface emissions report must clearly identify the location, date and time (to the nearest second), average wind speeds including wind gusts, and reading (in parts-per-million) of any value 500 parts-per-million methane or greater, other than non-repeatable, momentary readings. For location, you must determine the latitude and longitude coordinates using an instrument with an accuracy of at least 4 meters. The coordinates must be in decimal degrees with at least five decimal places. The Tier 4 surface emission report should also include the results of the most recent Tier 1 and Tier 2 results in order to verify that the landfill does not exceed 50 megagrams per year of NMOC.

(A) The initial Tier 4 surface emissions report must be submitted annually, starting within 30 days of completing the fourth quarter of Tier 4 SEM that demonstrates that site-specific surface methane emissions are below 500 parts-per-million methane, and following the procedure specified in paragraph (j)(2) of this section

(B) The Tier 4 surface emissions rate report must be submitted within 1 year of the first measured surface exceedance of 500 parts-per-million methane, following the procedure specified in paragraph (j)(2) of this section.

(iv) If the landfill is in the closed landfill subcategory, the owner or operator is exempt from submitting a collection and control system design plan to the Administrator provided that conditions in § 62.16711(g)(3) are met. If not, the owner or operator shall follow the submission procedures and timing in § 62.16724(d)(ii) and (iii) using a level of 50 Mg/yr instead of 34 Mg/yr.

(5) The landfill owner or operator must notify the Administrator that the design plan is completed and submit a copy of the plan's signature page. The Administrator has 90 days to decide whether the design plan should be submitted for review. If the Administrator chooses to review the plan, the approval process continues as described in paragraph (c)(6) of this section. However, if the Administrator indicates that submission is not required or does not respond within 90 days, the landfill owner or operator can continue to implement the plan with the recognition that the owner or operator is proceeding at their own risk. In the event that the design plan is required to be modified to obtain approval, the owner or operator must take any steps necessary to conform any prior actions to the approved design plan and any failure to do so could result in an enforcement action.

(6) Upon receipt of an initial or revised design plan, the Administrator must review the information submitted under paragraphs (d)(1) through (3) of this section and either approve it, disapprove it, or request that additional information be submitted. Because of the many site-specific factors involved with landfill gas system design, alternative systems may be necessary. A wide variety of system designs are possible, such as vertical wells, combination horizontal and vertical collection systems, or horizontal trenches only, leachate collection components, and passive systems. If the Administrator does not approve or disapprove the design plan, or does not request that additional information be submitted within 90 days of receipt, then the owner or operator may continue with implementation of the design plan, recognizing they would be proceeding at their own risk.

(7) If the owner or operator chooses to demonstrate compliance with the emission control requirements of this subpart using a treatment system as defined in this subpart, then the owner or operator must prepare a site-specific treatment system monitoring plan as specified in § 62.16726(b)(5). Legacy controlled landfills must prepare the monitoring plan no later than May 23, 2022.

(e) *Revised design plan.* The owner or operator who has already been required to submit a design plan under paragraph (d) of this section, or under subpart GGG of this part; 40 CFR part 60, subpart WWW; or a state plan implementing subpart Cc of 40 CFR part 60, must submit a revised design plan to the Administrator for approval as follows:

(1) At least 90 days before expanding operations to an area not covered by the previously approved design plan.

(2) Prior to installing or expanding the gas collection system in a way that is not consistent with the design plan that was submitted to the Administrator

according to paragraph (d) of this section.

(f) *Closure report.* Each owner or operator of a controlled landfill must submit a closure report to the Administrator within 30 days of ceasing waste acceptance. The Administrator may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR 258.60. If a closure report has been submitted to the Administrator, no additional wastes may be placed into the landfill without filing a notification of modification as described under 40 CFR 60.7(a)(4).

(g) *Equipment removal report.* Each owner or operator of a controlled landfill must submit an equipment removal report to the Administrator 30 days prior to removal or cessation of operation of the control equipment.

(1) The equipment removal report must contain the following items:

(i) A copy of the closure report submitted in accordance with paragraph (f) of this section; and

(ii) A copy of the initial performance test report demonstrating that the 15-year minimum control period has expired, unless the report of the results of the performance test has been submitted to the EPA via the EPA's Central Data Exchange (CDX), or information that demonstrates that the gas collection and control system will be unable to operate for 15 years due to declining gas flows. In the equipment removal report, the process unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted may be submitted in lieu of the performance test report if the report has been previously submitted to the EPA's CDX; and

(iii) Dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 34 megagrams or greater of NMOC per year, unless the NMOC emission rate reports have been submitted to the EPA via the EPA's CDX. If the NMOC emission rate reports have been previously submitted to the EPA's CDX, a statement that the NMOC emission rate reports have been submitted electronically and the dates that the reports were submitted to the EPA's CDX may be submitted in the equipment removal report in lieu of the NMOC emission rate reports; or

(iv) For the closed landfill subcategory, dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year, unless the NMOC emission rate reports have been submitted to the EPA via the EPA's CDX. If the NMOC emission rate reports have been previously submitted to the EPA's CDX, a statement that the NMOC emission rate reports have been submitted electronically and the dates that the reports were submitted to the EPA's CDX may be submitted in the equipment removal report in lieu of the NMOC emission rate reports.

(2) The Administrator may request such additional information as may be necessary to verify that all of the conditions for removal in § 62.16714(f) have been met.

(h) *Annual report.* The owner or operator of a landfill seeking to comply with § 62.16714(e)(2) using an active collection system designed in accordance with § 62.16714(b) must submit to the Administrator, following the procedures specified in paragraph (j)(2) of this section, an annual report of the recorded information in paragraphs (h)(1) through (7) of this section. The initial annual report must be submitted within 180 days of installation and startup of the collection and control system except for legacy controlled landfills that have already submitted an initial report under 40 CFR part 60, subpart WWW; subpart GGG of this part; or a state plan implementing 40 CFR part 60, subpart Cc. Except for legacy controlled landfills, the initial annual report must include the initial performance test report required under 40 CFR 60.8, as applicable, unless the report of the results of the performance test has been submitted to the EPA via the EPA's CDX. Legacy controlled landfills are exempted from submitting performance test reports in EPA's CDX provided that those reports were submitted under 40 CFR part 60, subpart WWW; subpart GGG of this part; or a state plan implementing 40 CFR part 60, subpart Cc. In the initial annual report, the process unit(s) tested, the pollutant(s) tested and the date that such performance test was conducted may be submitted in lieu of the performance test report if the report has been previously submitted to the EPA's CDX. The initial performance test report must be submitted, following the procedure specified in paragraph (j)(1) of this section, no later than the date that the initial annual report is submitted. For enclosed combustion devices and flares, reportable exceedances are defined under § 62.16726(c)(1). Legacy controlled landfills are required to submit the annual report no later than one year after the most recent annual report submitted. If complying with the operational provisions of §§ 63.1958, 63.1960, and 63.1961 of this chapter, as allowed at §§ 62.16716, 62.16720, and 62.16722, the owner or operator must follow the semi-annual reporting requirements in § 63.1981(h) of this chapter in lieu of this paragraph.

(1) Value and length of time for exceedance of applicable parameters monitored under § 62.16722(a)(1), (b), (c), (d), and (g).

(2) Description and duration of all periods when the gas stream was diverted from the control device or treatment system through a bypass line or the indication of bypass flow as specified under § 62.16722.

(3) Description and duration of all periods when the control device or treatment system was not operating and length of time the control device or treatment system was not operating.

(4) All periods when the collection system was not operating.

(5) The location of each exceedance of the 500 parts-per-million methane concentration as provided in § 62.16716(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month. For location, you must determine the latitude and longitude coordinates using an instrument with an accuracy of at least 4 meters. The coordinates must be in decimal degrees with at least five decimal places.

(6) The date of installation and the location of each well or collection system expansion added pursuant to § 62.16720(a)(3), (4), (b), and (c)(4).

(7) For any corrective action analysis for which corrective actions are required in § 62.16720(a)(3) or (4) and that take more than 60 days to correct the exceedance, the root cause analysis conducted, including a description of the recommended corrective action(s), the date for corrective action(s) already completed following the positive pressure or elevated temperature reading, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

(i) *Initial performance test report.* Each owner or operator seeking to comply with § 62.16714(c) must include the following information with the initial performance test report required under 40 CFR 60.8 of this chapter:

(1) A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion;

(2) The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas

extraction devices and the gas mover equipment sizing are based;

(3) The documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable material;

(4) The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area;

(5) The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill; and

(6) The provisions for the control of off-site migration.

(j) *Electronic reporting.* The owner or operator must submit reports electronically according to paragraphs (j)(1) and (2) of this section.

(1) Within 60 days after the date of completing each performance test (as defined in 40 CFR 60.8 of this chapter), the owner or operator must submit the results of each performance test according to the following procedures:

(i) For data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT website (*https://www3.epa.gov/ttn/chief/ert/ert_info.html*) at the time of the test, you must submit the results of the performance test to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). The CEDRI can be accessed through the EPA's CDX (*https://cdx.epa.gov/*). Performance test data must be submitted in a file format generated through the use of the EPA's ERT or an alternative file format consistent with the extensible markup language (XML) schema listed on the EPA's ERT website, once the XML schema is available. If you claim that some of the performance test information being submitted is confidential business information (CBI), you must submit a complete file generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT website, including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAQPS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404–02, 4930 Old Page Rd., Durham, NC 27703. The same ERT or alternate file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described earlier in this paragraph.

(ii) For data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the test, you must submit the results of the performance test to the Administrator at the appropriate address listed in 40 CFR 60.4 of this chapter.

(2) Each owner or operator required to submit reports following the procedure specified in this paragraph must submit reports to the EPA via the CEDRI (CEDRI can be accessed through the EPA's CDX). The owner or operator must use the appropriate electronic report in CEDRI for this subpart or an alternate electronic file format consistent with the XML schema listed on the CEDRI website (*https://www3.epa.gov/ttn/chief/cedri/index.html*). If the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the owner or operator must submit the report to the Administrator at the appropriate address listed in 40 CFR 60.4 of this chapter. Once the form has been available in CEDRI for 90 calendar days, the owner or operator must begin submitting all subsequent reports via CEDRI. The reports must be submitted by the deadlines specified in this subpart, regardless of the method in which the reports are submitted.

(k) *Corrective action and the corresponding timeline.* The owner or operator must submit according to paragraphs (k)(1) and (2) of this section. If complying with the operational provisions of 40 CFR 63.1958, 63.1960, and 63.1961 of this chapter, as allowed at §§ 62.16716, 62.16720, and 62.16722, the owner or operator must follow the corrective action and the corresponding timeline reporting requirements in § 63.1981(j) of this chapter in lieu of paragraphs (k)(1) and (2) of this section.

(1) For corrective action that is required according to § 62.16720(a)(3)(iii) or 62.16720(a)(4)(iii) and is expected to take longer than 120 days after the initial exceedance to complete, you must submit the root cause analysis, corrective action analysis, and corresponding implementation timeline to the Administrator as soon as practicable but no later than 75 days after the first measurement of positive pressure or temperature monitoring value of 55 degrees Celsius (131 degrees Fahrenheit) or above. The Administrator must approve the plan for corrective action and the corresponding timeline.

(2) For corrective action that is required according to § 62.16720(a)(3)(iii) or § 62.16720(a)(4)(iii) and is not completed within 60 days after the initial exceedance, you must submit a notification to the Administrator as soon as practicable but no later than 75 days after the first measurement of positive pressure or temperature exceedance.

(l) *Liquids addition.* The owner or operator of a designated facility with a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters that has employed leachate recirculation or added liquids based on a Research, Development, and Demonstration permit (issued through Resource Conservation and Recovery Act (RCRA), subtitle D, part 258) within the last 10 years must submit to the Administrator, annually, following the procedure specified in paragraph (j)(2) of this section, the following information:

(1) Volume of leachate recirculated (gallons per year) and the reported basis of those estimates (records or engineering estimates).

(2) Total volume of all other liquids added (gallons per year) and the reported basis of those estimates (records or engineering estimates).

(3) Surface area (acres) over which the leachate is recirculated (or otherwise applied).

(4) Surface area (acres) over which any other liquids are applied.

(5) The total waste disposed (megagrams) in the areas with recirculated leachate and/or added liquids based on on-site records to the extent data are available, or engineering estimates and the reported basis of those estimates.

(6) The annual waste acceptance rates (megagrams per year) in the areas with recirculated leachate and/or added liquids, based on on-site records to the extent data are available, or engineering estimates.

(7) The initial report must contain items in paragraph (l)(1) through (6) of this section per year for the most recent 365 days as well as for each of the previous 10 years, to the extent historical data are available in on-site records, and the report must be submitted no later than June 21, 2022.

(8) Subsequent annual reports must contain items in paragraph (l)(1) through (6) of this section for the 365-day period following the 365-day period included in the previous annual report, and the report must be submitted no later than 365 days after the date the previous report was submitted.

(9) Landfills in the closed landfill subcategory are exempt from reporting

requirements contained in paragraphs (l)(1) through (7) of this section.

(10) Landfills may cease annual reporting of items in paragraphs (l)(1) through (6) of this section once they have submitted the closure report in § 62.16724(f).

(m) *Tier 4 notification.* (1) The owner or operator of a designated facility with a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters must provide a notification of the date(s) upon which it intends to demonstrate site-specific surface methane emissions are below 500 parts-per-million methane, based on the Tier 4 provisions of § 62.16718(a)(6). The landfill must also include a description of the wind barrier to be used during the SEM in the notification. Notification must be postmarked not less than 30 days prior to such date.

(2) If there is a delay to the scheduled Tier 4 SEM date due to weather conditions, including not meeting the wind requirements in § 62.16718(a)(6)(A), the owner or operator of a landfill shall notify the Administrator by email or telephone no later than 48 hours before any known delay in the original test date, and arrange an updated date with the Administrator by mutual agreement.

(n) *Notification of meeting Tier 4.* The owner or operator of a designated facility must submit a notification to the EPA Regional office within 10 business days of completing each increment of progress. Each notification must indicate which increment of progress specified in § 62.16712 has been achieved. The notification must be signed by the owner or operator of the landfill.

(1) For the first increment of progress (submit control plan), you must follow paragraph (p) of this section in addition to submitting the notification described in paragraph (n) of this section. A copy of the design plan must also be kept on site at the landfill.

(2) For the second increment of progress, a signed copy of the contract(s) awarded must be submitted in addition to the notification described in paragraph (n) of this section.

(o) *Notification of failing to meet an increment of progress.* The owner or operator of a designated facility who fails to meet any increment of progress specified in § 62.16712(a)(1) through (5) according to the applicable schedule in § 62.16712 must submit notification that the owner or operator failed to meet the increment to the EPA Regional office within 10 business days of the applicable date in § 62.16712.

(p) *Alternate dates for increments 2 and 3.* The owner or operator (or the state or tribal air pollution control authority) that is submitting alternative dates for increments 2 and 3 according to § 62.16712(d) must do so by the date specified for submitting the final control plan. The date for submitting the final control plan is specified in § 62.16712(c), as applicable. The owner or operator (or the state or tribal air pollution control authority) must submit a justification if any of the alternative dates are later than the increment dates in table 1 of this subpart. In addition to submitting the alternative dates to the appropriate EPA Regional office, the owner or operator must also submit the alternative dates to the state or tribe.

(q) *24-hour high temperature report.* Each owner or operator that chooses to comply with the provisions in §§ 63.1958, 63.1960, and 63.1961 of this chapter, as allowed in §§ 62.16716, 62.16720, and 62.16722, must submit the 24-hour high temperature report according to § 63.1981(k) of this chapter.

§ 62.16726 Recordkeeping guidelines.

Follow the recordkeeping provisions in this section.

(a) Except as provided in § 62.16724(d)(2), each owner or operator of an MSW landfill subject to the provisions of § 62.16714(e) must keep for at least 5 years up-to-date, readily accessible, on-site records of the design capacity report that triggered § 62.16714(e), the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

(b) Except as provided in § 62.16724(d)(2), each owner or operator of a controlled landfill must keep up-to-date, readily accessible records for the life of the control system equipment of the data listed in paragraphs (b)(1) through (5) of this section as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring must be maintained for a minimum of 5 years. Records of the control device vendor specifications must be maintained until removal.

(1) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 62.16714(b):

(i) The maximum expected gas generation flow rate as calculated in § 62.16720(a)(1). The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Administrator.

(ii) The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in § 62.16728(a)(1).

(2) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 62.16714(c) through use of an enclosed combustion device other than a boiler or process heater with a design heat input capacity equal to or greater than 44 megawatts:

(i) The average temperature measured at least every 15 minutes and averaged over the same time period of the performance test.

(ii) The percent reduction of NMOC determined as specified in § 62.16714(c)(2) achieved by the control device.

(3) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 62.16714(c)(2)(i) through use of a boiler or process heater of any size: A description of the location at which the collected gas vent stream is introduced into the boiler or process heater over the same time period of the performance testing.

(4) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 62.16714(c)(1) through use of a non-enclosed flare, the flare type (*i.e.,* steam-assisted, air-assisted, or non-assisted), all visible emission readings, heat content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in 40 CFR 60.18 of this chapter; and continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the pilot flame or the flare flame is absent.

(5) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 62.16714(c)(3) through use of a landfill gas treatment system:

(i) *Bypass records.* Records of the flow of landfill gas to, and bypass of, the treatment system.

(ii) *Site-specific treatment monitoring plan.* A site-specific treatment monitoring plan, to include:

(A) Monitoring records of parameters that are identified in the treatment system monitoring plan and that ensure the treatment system is operating properly for each intended end use of the treated landfill gas. At a minimum, records should include records of filtration, de-watering, and compression parameters that ensure the treatment system is operating properly for each

intended end use of the treated landfill gas.

(B) Monitoring methods, frequencies, and operating ranges for each monitored operating parameter based on manufacturer's recommendations or engineering analysis for each intended end use of the treated landfill gas.

(C) Documentation of the monitoring methods and ranges, along with justification for their use.

(D) Identify who is responsible (by job title) for data collection.

(E) Processes and methods used to collect the necessary data.

(F) Description of the procedures and methods that are used for quality assurance, maintenance, and repair of all continuous monitoring systems.

(c) Except as provided in § 62.16724(d)(2), each owner or operator of a controlled landfill subject to the provisions of this subpart must keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in § 62.16722 as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.

(1) The following constitute exceedances that must be recorded and reported under § 62.16724:

(i) For enclosed combustors except for boilers and process heaters with design heat input capacity of 44 megawatts (150 million British thermal unit per hour) or greater, all 3-hour periods of operation during which the average temperature was more than 28 degrees Celsius (82 degrees Fahrenheit) below the average combustion temperature during the most recent performance test at which compliance with § 62.16714(c) was determined.

(ii) For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under paragraph (b)(3) of this section.

(2) Each owner or operator subject to the provisions of this subpart must keep up-to-date, readily accessible continuous records of the indication of flow to the control system and the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, specified under § 62.16722.

(3) Each owner or operator subject to the provisions of this subpart who uses a boiler or process heater with a design heat input capacity of 44 megawatts or greater to comply with § 62.16714(c) must keep an up-to-date, readily accessible record of all periods of operation of the boiler or process heater. Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other state, local, tribal, or Federal regulatory requirements.

(4) Each owner or operator seeking to comply with the provisions of this subpart by use of a non-enclosed flare must keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under § 62.16722(c), and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.

(5) Each owner or operator of a landfill seeking to comply with § 62.16714(e) using an active collection system designed in accordance with § 62.16714(b) must keep records of periods when the collection system or control device is not operating.

(d) Except as provided in § 62.16724(d)(2), each owner or operator subject to the provisions of this subpart must keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label on each collector that matches the labeling on the plot map.

(1) Each owner or operator subject to the provisions of this subpart must keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under § 62.16720(b).

(2) Each owner or operator subject to the provisions of this subpart must keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in § 62.16728(a)(3)(i) as well as any nonproductive areas excluded from collection as provided in § 62.16728(a)(3)(ii).

(e) Except as provided in § 62.16724(d)(2), each owner or operator subject to the provisions of this subpart must keep for at least 5 years up-to-date, readily accessible records of the items in paragraphs (e)(1) through (5) of this section. Each owner or operator that chooses to comply with the provisions in §§ 63.1958, 63.1960, and 63.1961 of this chapter, as allowed in §§ 62.16716, 62.16720, and 62.16722, must keep the records in paragraph (e)(6) of this section and must keep records according to § 63.1983(e)(1) through (5) of this chapter in lieu of paragraphs (e)(1) through (5) of this section.

(1) All collection and control system exceedances of the operational standards in § 62.16716, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.

(2) Each owner or operator subject to the provisions of this subpart must also keep records of each wellhead temperature monitoring value of 55 degrees Celsius (131 degrees Fahrenheit) or above, each wellhead nitrogen level at or above 20 percent, and each wellhead oxygen level at or above 5 percent.

(3) For any root cause analysis for which corrective actions are required in § 62.16720(a)(3) or § 62.16720(a)(4), keep a record of the root cause analysis conducted, including a description of the recommended corrective action(s) taken, and the date(s) the corrective action(s) were completed.

(4) For any root cause analysis for which corrective actions are required in § 62.16720(a)(3)(ii) or § 62.16720(a)(4)(ii), keep a record of the root cause analysis conducted, the corrective action analysis, the date for corrective action(s) already completed following the positive pressure reading or high temperature reading, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

(5) For any root cause analysis for which corrective actions are required in § 62.16720(a)(3)(iii) or § 62.16720(a)(4)(iii), keep a record of the root cause analysis conducted, the corrective action analysis, the date for corrective action(s) already completed following the positive pressure reading or high temperature reading, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates, and a copy of any comments or final approval on the corrective action analysis or schedule from the regulatory agency.

(6) Each owner or operator that chooses to comply with the provisions in §§ 63.1958, 63.1960, and 63.1961 of this chapter, as allowed in §§ 62.16716, 62.16720, and 62.16722, must keep records of the date upon which the owner or operator started complying with the provisions in §§ 63.1958, 63.1960, and 63.1961 of this chapter.

(f) Landfill owners or operators who convert design capacity from volume to mass or mass to volume to demonstrate that landfill design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, as provided in the definition of ''design capacity,'' must keep readily accessible, on-site records of the annual recalculation of site-specific density, design capacity, and

the supporting documentation. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

(g) Landfill owners or operators seeking to demonstrate that site-specific surface methane emissions are below 500 parts-per-million by conducting SEM under the Tier 4 procedures specified in § 62.16718(a)(6) must keep for at least 5 years up-to-date, readily accessible records of all SEM and information related to monitoring instrument calibrations conducted according to sections 8 and 10 of EPA Method 21 of appendix A–7 of 40 CFR part 60 of this chapter, including all of the following items:

(1) Calibration records.

(i) Date of calibration and initials of operator performing the calibration.

(ii) Calibration gas cylinder identification, certification date, and certified concentration.

(iii) Instrument scale(s) used.

(iv) A description of any corrective action taken if the meter readout could not be adjusted to correspond to the calibration gas value.

(v) If an owner or operator makes their own calibration gas, a description of the procedure used.

(2) Digital photographs of the instrument setup. The photographs must be time and date-stamped and taken at the first sampling location prior to sampling and at the last sampling location after sampling at the end of each sampling day, for the duration of the Tier 4 monitoring demonstration.

(3) Timestamp of each surface scan reading.

(i) Timestamp should be detailed to the nearest second, based on when the sample collection begins.

(ii) A log for the length of time each sample was taken using a stopwatch (*e.g.,* the time the probe was held over the area).

(4) Location of each surface scan reading. The owner or operator must determine the coordinates using an instrument with an accuracy of at least 4 meters. Coordinates must be in decimal degrees with at least five decimal places.

(5) Monitored methane concentration (parts per million) of each reading.

(6) Background methane concentration (parts per million) after each instrument calibration test.

(7) Adjusted methane concentration using most recent calibration (parts-per-million).

(8) For readings taken at each surface penetration, the unique identification location label matching the label specified in paragraph (d) of this section.

(9) Records of the operating hours of the gas collection system for each destruction device.

(h) Except as provided in § 62.16724(d)(2), each owner or operator subject to the provisions of this subpart must keep for at least 5 years up-to-date, readily accessible records of all collection and control system monitoring data for parameters measured in § 62.16722(a)(1), (2), and (3).

(i) Any records required to be maintained by this subpart that are submitted electronically via the EPA's CDX may be maintained in electronic format.

(j) For each owner or operator reporting leachate or other liquids addition under § 62.16724(l), keep records of any engineering calculations or company records used to estimate the quantities of leachate or liquids added, the surface areas for which the leachate or liquids were applied, and the estimates of annual waste acceptance or total waste in place in the areas where leachate or liquids were applied.

§ 62.16728 Specifications for active collection systems.

Follow the specifications for active collection systems in this section.

(a) Each owner or operator seeking to comply with § 62.16714(b) must site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the following procedures unless alternative procedures have been approved by the Administrator.

(1) The collection devices within the interior must be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues must be addressed in the design: Depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, resistance to the refuse decomposition heat, and ability to isolate individual components or sections for repair or troubleshooting without shutting down entire collection system.

(2) The sufficient density of gas collection devices determined in paragraph (a)(1) of this section must address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior.

(3) The placement of gas collection devices determined in paragraph (a)(1) of this section must control all gas producing areas, except as provided by paragraphs (a)(3)(i) and (ii) of this section.

(i) Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under § 62.16726(d). The documentation must provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and must be provided to the Administrator upon request.

(ii) Any nonproductive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material must be documented and provided to the Administrator upon request. A separate NMOC emissions estimate must be made for each section proposed for exclusion, and the sum of all such sections must be compared to the NMOC emissions estimate for the entire landfill.

(A) The NMOC emissions from each section proposed for exclusion must be computed using Equation 7:

$$Q_i = 2kL_oM_i(e^{-kt_i})(C_{NMOC})(3.6\times10^{-9}) \quad \text{(Eq. 7)}$$

Where:

Q_i = NMOC emission rate from the ith section, megagrams per year.
k = Methane generation rate constant, year $^{-1}$.
L_o = Methane generation potential, cubic meters per megagram solid waste.
M_i = Mass of the degradable solid waste in the ith section, megagram.
t_i = Age of the solid waste in the ith section, years.
C_{NMOC} = Concentration of NMOC, parts-per-million by volume.
3.6×10^{-9} = Conversion factor.

(B) If the owner or operator is proposing to exclude, or cease gas collection and control from, nonproductive physically separated (*e.g.,* separately lined) closed areas that already have gas collection systems, NMOC emissions from each physically separated closed area must be computed using either Equation 3 in § 62.16718 or Equation 7 in paragraph (a)(3)(ii)(A) of this section.

(iii) The values for k and C_{NMOC} determined in field testing must be used if field testing has been performed in determining the NMOC emission rate or the radii of influence (the distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for k, Lo, and C_{NMOC} provided in § 62.16718 or the alternative values from § 62.16718 must be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in paragraph (a)(3)(i) of this section.

(b) Each owner or operator seeking to comply with § 62.16714(b) must construct the gas collection devices using the following equipment or procedures:

(1) The landfill gas extraction components must be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: Convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system must extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors must be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations must be situated with regard to the need to prevent excessive air infiltration.

(2) Vertical wells must be placed so as not to endanger underlying liners and must address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors must be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices must be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.

(3) Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly must include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices must be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness.

(c) Each owner or operator seeking to comply with § 62.16714(c) must convey the landfill gas to a control system in compliance with § 62.16714(c) through the collection header pipe(s). The gas mover equipment must be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures:

(1) For existing collection systems, the flow data must be used to project the maximum flow rate. If no flow data exist, the procedures in paragraph (c)(2) of this section must be used.

(2) For new collection systems, the maximum flow rate must be in accordance with § 62.16720(a)(1).

§ 62.16730 Definitions.

Terms used but not defined in this subpart have the meaning given them in the Clean Air Act and in subparts A and B of 40 CFR part 60 of this chapter.

Achieve final compliance means to connect and operate the collection and control system as specified in the final control plan. Within 180 days after the date the landfill is required to achieve final compliance, the initial performance test must be conducted.

Active collection system means a gas collection system that uses gas mover equipment.

Active landfill means a landfill in which solid waste is being placed or a landfill that is planned to accept waste in the future.

Administrator means the Administrator of the U.S. Environmental Protection Agency or his/her authorized representative or the Administrator of a state air pollution control agency.

Award contract means the MSW landfill owner or operator enters into legally binding agreements or contractual obligations that cannot be canceled or modified without substantial financial loss to the MSW landfill owner or operator. The MSW landfill owner or operator may award a number of contracts to install the collection and control system. To meet this increment of progress, the MSW landfill owner or operator must award a contract or contracts to initiate on-site construction or installation of the collection and control system.

Closed landfill means a landfill in which solid waste is no longer being placed, and in which no additional solid wastes will be placed without first filing a notification of modification as prescribed under 40 CFR 60.7(a)(4) of this chapter. Once a notification of modification has been filed, and additional solid waste is placed in the landfill, the landfill is no longer closed.

Closed area means a separately lined area of an MSW landfill in which solid waste is no longer being placed. If additional solid waste is placed in that area of the landfill, that landfill area is no longer closed. The area must be separately lined to ensure that the landfill gas does not migrate between open and closed areas.

Closed landfill subcategory means a closed landfill that has submitted a closure report as specified in § 62.16724(f) on or before September 27, 2017.

Closure means that point in time when a landfill becomes a closed landfill.

Commercial solid waste means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes.

Complete on-site construction means that all necessary collection system components and air pollution control devices identified in the final control

plan are on site, in place, and ready for operation.

Controlled landfill means any landfill at which collection and control systems are required under this subpart as a result of the NMOC emission rate. The landfill is considered controlled at the time a collection and control system design plan is prepared in compliance with § 62.16714(e)(2). Controlled landfills also includes those landfills that meet the definition of *legacy controlled landfills,* as defined in this subpart.

Corrective action analysis means a description of all reasonable interim and long-term measures, if any, that are available, and an explanation of why the selected corrective action(s) is/are the best alternative(s), including, but not limited to, considerations of cost effectiveness, technical feasibility, safety, and secondary impacts.

Design capacity means the maximum amount of solid waste a landfill can accept, as indicated in terms of volume or mass in the most recent permit issued by the state, local, or tribal agency responsible for regulating the landfill, plus any in-place waste not accounted for in the most recent permit. If the owner or operator chooses to convert the design capacity from volume to mass or from mass to volume to demonstrate its design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, the calculation must include a site-specific density, which must be recalculated annually.

Disposal facility means all contiguous land and structures, other appurtenances, and improvements on the land used for the disposal of solid waste.

Emission rate cutoff means the threshold annual emission rate to which a landfill compares its estimated emission rate to determine if control under the regulation is required.

Enclosed combustor means an enclosed firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air. An enclosed flare is considered an enclosed combustor.

EPA approved state plan means a state plan that EPA has approved based on the requirements in 40 CFR part 60, subpart B or Ba to implement and enforce 40 CFR part 60, subpart Cf. An approved state plan becomes effective on the date specified in the document published in the **Federal Register** announcing EPA's approval.

Flare means an open combustor without enclosure or shroud.

Final control plan (Collection and control system design plan) means a plan that describes the collection and control system that will capture the gas generated within an MSW landfill. The collection and control system design plan must be prepared by a professional engineer and must describe a collection and control system that meets the requirements of § 62.1614(b) and (c). The final control plan must contain engineering specifications and drawings of the collection and control system. The final control plan must include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping, or reporting provisions of §§ 62.16716 through 62.16726 proposed by the owner or operator. The final control plan must either conform with the specifications for active collection systems in § 62.16728 or include a demonstration that shows that based on the size of the landfill and the amount of waste expected to be accepted, the system is sized properly to collect the gas, control emissions of NMOC to the required level and meet the operational standards for a landfill.

Gas mover equipment means the equipment (*i.e.,* fan, blower, compressor) used to transport landfill gas through the header system.

Gust means the highest instantaneous wind speed that occurs over a 3-second running average.

Indian Country means all land within the limits of any Indian reservation under the jurisdiction of the United States government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation; all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state; and all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

Initiate on-site construction means to begin any of the following: Installation of the collection and control system to be used to comply with the emission limits as outlined in the final control plan; physical preparation necessary for the installation of the collection and control system to be used to comply with the final emission limits as outlined in the final control plan; or, alteration of an existing collection and control system to be used to comply with the final emission limits as outlined in the final control plan.

Household waste means any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including, but not limited to, single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas). Household waste does not include fully segregated yard waste. Segregated yard waste means vegetative matter resulting exclusively from the cutting of grass, the pruning and/or removal of bushes, shrubs, and trees, the weeding of gardens, and other landscaping maintenance activities. Household waste does not include construction, renovation, or demolition wastes, even if originating from a household.

Industrial solid waste means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of the RCRA, parts 264 and 265 of this chapter. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: Electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

Interior well means any well or similar collection component located inside the perimeter of the landfill waste. A perimeter well located outside the landfilled waste is not an interior well.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile as those terms are defined under § 257.2 of this title.

Lateral expansion means a horizontal expansion of the waste boundaries of an existing MSW landfill. A lateral expansion is not a modification unless it results in an increase in the design capacity of the landfill.

Leachate recirculation means the practice of taking the leachate collected from the landfill and reapplying it to the landfill by any of one of a variety of methods, including pre-wetting of the waste, direct discharge into the working face, spraying, infiltration ponds, vertical injection wells, horizontal gravity distribution systems, and pressure distribution systems.

Legacy controlled landfill means any MSW landfill subject to this subpart that submitted a collection and control system design plan prior to May 21, 2021 in compliance with § 60.752(b)(2)(i) of this chapter, the Federal plan at subpart GGG of this part, or a state/tribal plan implementing 40 CFR part 60, subpart Cc of this chapter, depending on which regulation was applicable to the landfill. This definition applies to those landfills that completed construction and began operations of the GCCS and those that are within the 30-month timeline for installation and start-up of a GCCS according to § 60.752(b)(2)(ii) of this chapter, the Federal plan at subpart GGG of this part, or a state/tribal plan implementing 40 CFR part 60, subpart Cc.

Modification means an increase in the permitted volume design capacity of the landfill by either lateral or vertical expansion based on its permitted design capacity as of July 17, 2014. Modification does not occur until the owner or operator commences construction on the lateral or vertical expansion.

Municipal solid waste landfill or *MSW landfill* means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. An MSW landfill may also receive other types of RCRA, Subtitle D wastes (§ 257.2 of this title) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of an MSW landfill may be separated by access roads. An MSW landfill may be publicly or privately owned. An MSW landfill may be a new MSW landfill, an existing MSW landfill, or a lateral expansion.

Municipal solid waste landfill emissions or *MSW landfill emissions* means gas generated by the decomposition of organic waste deposited in an MSW landfill or derived from the evolution of organic compounds in the waste.

NMOC means nonmethane organic compounds, as measured according to the provisions of § 62.16718.

Negative declaration letter means a letter to EPA declaring that there are no existing MSW landfills in the state or that there are no existing MSW landfills in the state that must install collection and control systems according to the requirements of 40 CFR part 60, subpart Cf.

Nondegradable waste means any waste that does not decompose through chemical breakdown or microbiological activity. Examples are, but are not limited to, concrete, municipal waste combustor ash, and metals.

Passive collection system means a gas collection system that solely uses positive pressure within the landfill to move the gas rather than using gas mover equipment.

Protectorate means American Samoa, the Commonwealth of Puerto Rico, the District of Columbia, Guam, the Northern Mariana Islands, and the Virgin Islands.

Root cause analysis means an assessment conducted through a process of investigation to determine the primary cause, and any other contributing causes, of positive pressure at a wellhead.

Sludge means the term sludge as defined in 40 CFR 258.2.

Solid waste means the term solid waste as defined in 40 CFR 258.2.

State means any of the 50 United States and the protectorates of the United States.

State plan means a plan submitted pursuant to section 111(d) of the Clean Air Act and subpart B of part 60 of this chapter that implements and enforces subpart Cf of 40 CFR part 60 of this chapter.

Sufficient density means any number, spacing, and combination of collection system components, including vertical wells, horizontal collectors, and surface collectors necessary to maintain emission and migration control as determined by measures of performance set forth in this part.

Sufficient extraction rate means a rate sufficient to maintain a negative pressure at all wellheads in the collection system without causing air infiltration, including any wellheads connected to the system as a result of expansion or excess surface emissions, for the life of the blower.

Treated landfill gas means landfill gas processed in a treatment system as defined in this subpart.

Treatment system means a system that filters, de-waters, and compresses landfill gas for sale or beneficial use.

Tribal plan means a plan submitted by a Tribal Authority pursuant to 40 CFR parts 9, 35, 49, 50, and 81 that implements and enforces 40 CFR part 60, subpart Cf.

Untreated landfill gas means any landfill gas that is not treated landfill gas.

TABLE 1 TO SUBPART OOO OF PART 62—GENERIC COMPLIANCE SCHEDULE AND INCREMENTS OF PROGRESS

Increment	Date if using tiers 1, 2, or 3	Date if using tier 4	Date if a legacy controlled landfill
Increment 1—Submit cover page of final control plan.	1 year after initial NMOC emission rate report or the first annual emission rate report showing NMOC emissions ≥34 megagrams per year.[1].	1 year after the first measured concentration of methane of 500 parts per million or greater from the surface of the landfill.	1 year after the first NMOC emission rate report or the first annual emission rate report showing NMOC emissions ≥50 megagrams per year submitted under a previous regulation.[2]
Increment 2—Award Contracts.	20 months after initial NMOC emission rate report or the first annual emission rate report showing NMOC emissions ≥34 megagrams per year.[1].	20 months after the most recent NMOC emission rate report showing NMOC emissions ≥34 megagrams per year.	20 months after the most recent NMOC emission rate report showing NMOC emissions ≥50 megagrams per year submitted under a previous regulation.[2]
Increment 3—Begin on-site construction.	24 months after initial NMOC emission rate report or the first annual emission rate report showing NMOC emissions ≥34 megagrams per year.[1].	24 months after the most recent NMOC emission rate report showing NMOC emissions ≥34 megagrams per year.	24 months after the most recent NMOC emission rate report showing NMOC emissions ≥50 megagrams per year submitted under a previous regulation.[2]
Increment 4—Complete on-site construction.	30 months after initial NMOC emission rate report or the first annual emission rate report showing NMOC emissions ≥34 megagrams per year.[1].	30 months after the most recent NMOC emission rate report showing NMOC emissions ≥34 megagrams per year.	30 months after the first NMOC emission rate report or the first annual emission rate report showing NMOC emissions ≥50 megagrams submitted under a previous regulation.

TABLE 1 TO SUBPART OOO OF PART 62—GENERIC COMPLIANCE SCHEDULE AND INCREMENTS OF PROGRESS—Continued

Increment	Date if using tiers 1, 2, or 3	Date if using tier 4	Date if a legacy controlled landfill
Increment 5—Final compliance.	30 months after initial NMOC emission rate report or the first annual emission rate report showing NMOC emissions ≥34 megagrams per year.[1].	30 months after the most recent NMOC emission rate report showing NMOC emissions ≥34 megagrams per year.	30 months after the first NMOC emission rate report or the first annual emission rate report showing NMOC emissions ≥50 megagrams submitted under a previous regulation.[2]

[1] 50 megagrams per year NMOC for the closed landfill subcategory.
[2] Previous regulation refers to 40 CFR part 60, subpart WWW; 40 CFR part 62, subpart GGG; or a state plan implementing 40 CFR part 60, subpart Cc. Increments of progress that have already been completed under previous regulations do not have to be completed again under this subpart.

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APPENDIX C.2

Preamble and Proposed Rule Language

30 TAC Chapter 113, Subchapter D

Divisions 1 & 6

The Texas Commission on Environmental Quality (TCEQ, agency, or commission) proposes new §§113.2400, 113.2402, 113.2404, 113.2406, 113.2408, 113.2410, and 113.2412; and amended §113.2069.

The proposed new and amended sections are included in the accompanying proposed revisions to the Federal Clean Air Act (FCAA), §111(d) Texas State Plan for Existing Municipal Solid Waste (MSW) Landfills. If adopted by the commission, the revisions to Chapter 113 and the associated revisions to the state plan will be submitted to the U.S. Environmental Protection Agency (EPA) for review and approval.

Background and Summary of the Factual Basis for the Proposed Rules

The proposed amendments to Chapter 113, Standards of Performance for Hazardous Air Pollutants and for Designated Facilities and Pollutants, are necessary to implement emission guidelines in 40 Code of Federal Regulations (CFR) Part 60, Subpart Cf, Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills. These emission guidelines (2016 emission guidelines) were promulgated by the EPA on August 29, 2016 (81 FR 59276), and amended on August 26, 2019 (84 FR 44547), and March 26, 2020 (85 FR 17244). The August 26, 2019, amendments to Subpart Cf were vacated on April 5, 2021, by the D.C. Circuit Court of Appeals, and are not included in this proposal. On May 21, 2021, the EPA also published a federal plan (86 FR 27756) to implement the 2016 emission guidelines for MSW landfills located in states where an approved FCAA, §111(d), state plan is not in effect. The federal plan for MSW landfills

was adopted under 40 CFR Part 62, Subpart OOO.

The FCAA, §111, requires the EPA to develop performance standards and other requirements for categories of sources which the EPA finds "…causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare." Under FCAA, §111, the EPA promulgates New Source Performance Standards (NSPS) and Emission Guidelines. NSPS regulations promulgated by the EPA apply to new stationary sources for which construction begins after the NSPS is proposed, or that are reconstructed or modified on or after a specified date. Emission Guidelines promulgated by the EPA are similar to NSPS, except that they apply to existing sources which were constructed on or before the date the NSPS is proposed, or that are reconstructed or modified before a specified date. Unlike the NSPS, emission guidelines are not enforceable until the EPA approves a state plan or adopts a federal plan for implementing and enforcing them.

States are required under the FCAA, §111(d), and 40 CFR Part 60, Subpart B, to adopt and submit to the EPA for approval a state plan to implement and enforce emission guidelines promulgated by the EPA. A state plan is required to be at least as protective as the corresponding emission guidelines. The FCAA also requires the EPA to develop, implement, and enforce a federal plan to implement the emission guidelines. The federal plan applies to affected units in states without an approved state plan.

In 1996, the EPA promulgated the original NSPS for MSW landfills under 40 CFR Part 60 Subpart WWW, and corresponding emission guidelines (the 1996 emission guidelines) under 40 CFR Part 60 Subpart Cc. TCEQ adopted rules under Chapter 113, Subchapter D, Division 1, and a corresponding §111(d) state plan, to implement the 1996 emission guidelines on October 7, 1998 (23 TexReg 10874). The EPA approved TCEQ's rules and state plan for existing MSW landfills on June 17, 1999 (64 FR 32427).

On August 29, 2016, the EPA adopted a new NSPS (40 CFR Part 60 Subpart XXX) and new emission guidelines (40 CFR Part 60 Subpart Cf) for MSW landfills, which essentially replaced the 1996 NSPS and emission guidelines. The 2016 emission guidelines lowered the emission threshold at which a landfill gas collection system is required from 50 megagrams (Mg) of non-methane organic compounds (NMOC) to 34 Mg of NMOC. The EPA's 2016 adoption of NSPS Subpart XXX and the 2016 emission guidelines under Subpart Cf also included changes to monitoring, recordkeeping, and reporting requirements, relative to the original 1996 requirements of Subparts WWW and Cc.

The original deadline for states to submit a state plan to implement the EPA's 2016 emission guidelines for MSW landfills was May 30, 2017. The TCEQ submitted a request for an extension to this deadline as provided under 40 CFR §60.27(a). In June 2017, TCEQ received a response from EPA Region 6 which stated that, as a result of the stay in effect at that time, "…a state plan submittal is not required at this time." The

stay expired August 29, 2017. On October 17, 2017, the EPA released a "Desk Statement" concerning the emission guidelines, which stated that "…we do not plan to prioritize the review of these state plans nor are we working to issue a Federal Plan for states that failed to submit a state plan. A number of states have expressed concern that their failure to submit a state plan could subject them to sanctions under the Clean Air Act. As the Agency has previously explained, states that fail to submit state plans are not subject to sanctions (e.g., loss of federal highway funds)." Given that the EPA's Desk Statement indicated that submittal of state plans was not a priority, and considering that the EPA had stated that a reconsideration rulemaking of the NSPS and emission guidelines was impending, TCEQ put state plan development on hiatus to monitor developments in the federal rules. On August 26, 2019, the EPA promulgated rules which established a new deadline of August 29, 2019, for states to submit a §111(d) state plan for the 2016 emission guidelines. However, the August 26, 2019, rules were vacated and remanded on April 5, 2021, effectively restoring the original Subpart B deadline of May 30, 2017. *(Environmental Defense Fund v. EPA*, No. 19-1222 (D.C. Circuit, 2021)).

On March 12, 2020, the EPA published a finding of failure to submit (85 FR 14474) that determined that 42 states and territories, including the State of Texas, had failed to submit the required §111(d) state plans to implement the 2016 emission guidelines for MSW landfills. On May 21, 2021, the EPA published a federal plan under 40 CFR Part 62, Subpart OOO, to implement the 2016 emission guidelines for MSW landfills in

states where an approved §111(d) state plan for the 2016 emission guidelines was not in effect. This federal plan became effective on June 21, 2021, and currently applies to MSW landfills in Texas and numerous other states without an approved state plan implementing the 2016 emission guidelines. The overall requirements of the federal plan are similar to the emission guidelines in Subpart Cf, but EPA included certain changes and features in the federal plan to simplify compliance obligations for landfills that are already controlling emissions under prior landfill regulations such as 40 CFR Part 60, Subpart WWW, or state rules adopted as part of a previously approved state plan for the 1996 emission guidelines. Once a state has obtained approval for a §111(d) state plan implementing the 2016 emission guidelines, most requirements of the federal plan no longer apply, as affected sources would instead comply with the requirements of the approved state plan. (Some of the compliance deadlines and increments of progress specified in the federal plan may still apply.)

In order to implement the EPA's 2016 emission guidelines, TCEQ must revise the corresponding Chapter 113 rules and state plan for existing MSW landfills. The proposed changes to Chapter 113 include amendments to §113.2069 in Subchapter D, Division 1, and several new sections under a proposed Division 6. The proposed rules would phase out the requirement to comply with the commission's existing Division 1 rules and phase in new rules corresponding to the EPA's 2016 emission guidelines. The proposed Division 6 rules also incorporate certain elements from the 40 CFR Part 62 Subpart OOO federal plan to facilitate ongoing compliance for MSW landfills in Texas

which have been required to comply with the federal plan since it became effective on June 21, 2021. The transition date for the applicability of the proposed Division 6 rules, and non-applicability of the existing Division 1 rules, would be the effective date of the EPA's approval of Texas' revisions to the §111(d) state plan. This is discussed in more detail in the section-by-section discussion for the proposed changes to §113.2069 and proposed new §113.2412.

Interested persons are encouraged to consult the EPA's 2016 emission guidelines under 40 CFR Part 60 Subpart Cf, and the federal plan under 40 CFR Part 62 Subpart OOO, for further information concerning the specific requirements that are the subject of this proposed rulemaking. In a concurrent action, the commission is proposing a state plan revision to implement and enforce the 2016 emission guidelines that are the subject of this proposed rulemaking.

Section by Section Discussion

§113.2069, Compliance Schedule and Transition to 2016 Landfill Emission Guidelines

The commission proposes an amendment to §113.2069. Proposed subsection (c) serves as a transition mechanism for owners or operators of existing MSW landfills to end compliance with the requirements of Chapter 113, Subchapter D, Division 1, and begin compliance with the requirements of Subchapter D, Division 6, based on the implementation date specified in §113.2412. The implementation date is a future date established when the EPA's approval of the revised Texas §111(d) state plan for the

2016 emission guidelines for landfills becomes effective. On and after this date, owners or operators of MSW landfills will no longer be required to comply with the Division 1 rules, but must instead comply with the applicable requirements of Division 6.

The Division 1 rule requirements were created to implement the 1996 emission guidelines contained in 40 CFR Part 60 Subpart Cc, which have been supplanted by the more stringent 2016 emission guidelines contained in 40 CFR Part 60 Subpart Cf. These Division 1 rules will no longer be needed once the EPA approves TCEQ's new Division 6 rules and the corresponding §111(d) state plan to implement the 2016 emission guidelines.

The commission also proposes to revise the title of §113.2069 to reflect that the section now contains provisions for the transition from the Chapter 113, Division 1, requirements to the new Division 6 rules implementing the 2016 emission guidelines.

Division 6: 2016 Emission Guidelines for Existing Municipal Solid Waste Landfills

§113.2400, Applicability

The commission proposes new §113.2400, which contains requirements establishing the applicability of the new Subchapter D, Division 6, rules which implement the 2016 emission guidelines. Proposed subsection (a) specifies that the Division 6 rules apply

to existing MSW landfills for which construction, reconstruction, or modification was commenced on or before July 17, 2014, except for certain landfills exempted under the provisions of proposed §113.2406. The applicability of the proposed Division 6 requirements includes MSW landfills which were previously subject to the requirements of Chapter 113, Subchapter D, Division 1; the requirements of 40 CFR Part 60 Subpart WWW; or the requirements of the federal plan adopted by the EPA to implement the 2016 emission guidelines (40 CFR Part 62 Subpart OOO).

Proposed subsection (b) is intended to clarify that physical or operational changes made to an existing landfill solely for purposes of achieving compliance with the Division 6 rules will not cause the landfill to become subject to NSPS under 40 CFR Part 60, Subpart XXX. This proposed subsection corresponds to 40 CFR Part 60, Subpart Cf, §60.31f(b).

Proposed subsection (c) is intended to clarify that MSW landfills which are subject to 40 CFR Part 60 Subpart XXX are not subject to the requirements of proposed Division 6. 40 CFR Part 60 Subpart XXX applies to landfills which have been modified, constructed, or reconstructed after July 17, 2014, whereas the proposed Division 6 requirements apply to MSW landfills which have not been modified, constructed, or reconstructed after July 17, 2014.

Proposed subsection (d) establishes that the requirements of Division 6 do not apply

until the implementation date specified in proposed §113.2412(a). This implementation date corresponds to the future date when the EPA's approval of Texas' revised §111(d) state plan for existing MSW landfills becomes effective. Until that date, owners or operators of existing MSW landfills must continue complying with the Chapter 113, Division 1, requirements for existing MSW landfills. The EPA will publish a notice in the *Federal Register* once their review of the revised Texas §111(d) state plan has been completed.

§113.2402, Definitions

The commission proposes new §113.2402, which identifies the definitions that apply for the purposes of Subchapter D, Division 6. Proposed subsection (a) incorporates the definitions in 40 CFR §§60.2 and 60.41f by reference, as amended through May 16, 2007, and March 26, 2020, respectively. Proposed subsections (b) and (c) address certain exceptions or additional definitions relevant to the proposed Division 6 rules.

Proposed subsection (b) establishes that the term "Administrator" as used in 40 CFR Part 60, §§60.30f – 60.41f shall refer to the commission, except for the specific purpose of 40 CFR §60.35f(a)(5), in which case the term "Administrator" shall refer to the Administrator of the EPA. Under 40 CFR §60.30f(c)(1), approval of alternative methods to determine NMOC concentration or a site-specific methane generation rate constant cannot be delegated to States. The federal rule associated with approval of these alternative methods is 40 CFR §60.35f(a)(5), so for purposes of this specific rule

the EPA must remain "the Administrator."

Proposed subsection (c) establishes a definition of a "legacy controlled landfill" for use with the proposed Division 6 rules. The proposed definition parallels the definition of "legacy controlled landfill" used by the EPA in the 40 CFR Part 62, Subpart OOO federal plan, with minor changes to align this definition with the Chapter 113 landfill rules. In plain language, a legacy controlled landfill is a landfill which submitted a collection and control system design plan before May 21, 2021, to comply with previous standards for MSW landfills (either 40 CFR Part 60, Subpart WWW, or 30 TAC Chapter 113, Division 1). This includes not only landfills which have already completed construction and installation of the GCCS, but also those that have submitted design plans and are within the 30-month timeline to install and start-up a GCCS according to 40 CFR §60.752(b)(2)(ii) (if subject to NSPS Subpart WWW), or the corresponding requirements of Chapter 113, Division 1.

§113.2404, Standards for existing municipal solid waste landfills

The commission proposes new §113.2404, which contains the technical and administrative requirements for affected MSW landfills under Subchapter D, Division 6.

Proposed subsection (a) specifies the following requirements for MSW landfills subject to Division 6: default emission standards; operational standards; compliance, testing, and monitoring provisions; recordkeeping and reporting provisions; and other

technical and administrative requirements. Proposed subsection (a) refers directly to the provisions of 40 CFR Part 60, Subpart Cf, as amended, for the relevant requirement. The various sections of Subpart Cf have been amended at different times, so the most recent amendment date of each rule section is noted in the proposed rule text. Owners or operators of existing MSW landfills subject to Division 6 would be required to comply with the referenced requirements of Subpart Cf, as applicable, unless otherwise specified within the Division 6 rules. Certain landfills, such as legacy controlled landfills, are subject to different (non-Subpart Cf) requirements as addressed in proposed §113.2404(b), (c), and (d), and in §113.2410.

Proposed subsection (b) establishes that landfill gas collection and control systems that are approved by the commission and installed in compliance with 30 TAC §115.152 are deemed to satisfy certain technical requirements of these emission guidelines. Proposed subsection (b) is intended to reduce potentially duplicative requirements relating to the landfill gas collection and control system. The gas collection and control system requirements in 30 TAC §115.152 are based on the requirements in the proposed version of the original landfill NSPS under 40 CFR Part 60, Subpart WWW (56 FR 24468, May 30, 1991). Proposed subsection (b) is essentially carried over from existing 30 TAC §113.2061(b), but the text of the proposed rule has been rephrased to more clearly state which specific design requirements of 40 CFR Part 60, Subpart Cf are satisfied. A detailed explanation of the 30 TAC §115.152 requirements and how they compare to the corresponding requirements of 40 CFR Part

60, Subpart Cf is provided in Appendix C.5 of the proposed state plan document. The technical requirements of 30 TAC §115.152 are still substantially equivalent to the corresponding Subparts Cc and Cf requirements for landfill gas collection and control systems, so preserving this previously approved aspect of the Texas state plan is still appropriate and would not result in any backsliding of emission standards or control system requirements. Owners or operators of landfills meeting the Chapter 115 requirements must still comply with all other applicable requirements of Division 6 and the associated requirements of 40 CFR Part 60, Subpart Cf, except for 40 CFR §60.33f(b) and (c).

Proposed subsection (c) allows legacy controlled landfills or landfills in the closed landfill subcategory that have already completed initial or subsequent performance tests to comply with prior landfill regulations (such as 40 CFR Part 60 Subpart WWW, or the Chapter 113, Subchapter D, Division 1, rules) to use those performance test results to comply with the proposed Division 6 rules. This proposed subsection parallels similar language in Subpart Cf at 40 CFR §60.33f(c)(2)(iii), but adds legacy controlled landfills as eligible to use this provision. This is consistent with the approach EPA used for the federal plan at 40 CFR §62.16714(c)(2)(iii). The commission believes that expanding the provision to include legacy controlled landfills, as the EPA did with the federal plan, is reasonable and will not reduce the effectiveness of the emission guidelines as implemented by the proposed revisions to the Texas §111(d) state plan for landfills. This provision will minimize the need for costly re-testing when

appropriately recent test results are already available as a result of testing for compliance with prior landfill emission standards. Existing landfills in Texas will have been operating under the requirements of the federal plan for some time prior to the EPA's approval of the proposed changes to Chapter 113, and maintaining consistency with the federal plan for purposes of this requirement should reduce the potential for confusion or noncompliance while having no adverse effect on emissions or the environment.

Proposed subsection (d) specifies that legacy controlled landfills shall comply with the requirements of 40 CFR §62.16714(b)(1), as amended through May 21, 2021, in lieu of the requirements of 40 CFR §60.33f(b)(1). This change in requirements (relative to the Subpart Cf requirements) is necessary and reasonable because in the 40 CFR Part 62, Subpart OOO federal plan, 40 CFR §62.16714(b)(1)(ii) addresses the 30-month control deadlines for both legacy controlled landfills and landfills in the closed landfill subcategory, where the corresponding Subpart Cf requirement of 40 CFR §60.33f(b)(1)(ii) only addresses landfills in the closed landfill subcategory. The approach the EPA used in the federal plan to address legacy controlled landfills is an improvement relative to the corresponding provisions of Subpart Cf. Existing landfills in Texas will have been operating under the requirements of the federal plan for some time prior to the EPA's approval of the proposed changes to Chapter 113, and maintaining consistency with the federal plan for purposes of this requirement should reduce the potential for confusion or noncompliance while having no adverse effect on

emissions or the environment.

§113.2406, Exemptions, Alternate Emission Standards, and Alternate Compliance Schedules

The commission proposes new §113.2406, which contains exemptions from the proposed Subchapter D, Division 6, requirements.

Proposed subsection (a) would exempt certain MSW landfills from the requirements of Division 6. This proposed exemption is carried over from the Division 1 landfill rules (30 TAC §113.2060(2)(A)) and the previously approved state plan, but has been rephrased as an explicit exemption rather than as a part of the definition of existing MSW landfill. The proposed rule exempts MSW landfills which have not accepted waste since October 9, 1993, and have no remaining waste disposal capacity. This proposed exemption modifies the applicability of the rules relative to the default federal requirements of 40 CFR Part 60, Subparts Cc and Cf, because it excludes MSW landfills which stopped accepting waste between November 8, 1987 (the date specified in the federal guidelines) and October 9, 1993. This proposed exemption is in accordance with 40 CFR §60.24(f) criteria, which allow a state rule to be less stringent for a particular designated class of facilities provided the state can show that factors exist which make application of a less stringent standard significantly more reasonable. When TCEQ adopted the Chapter 113, Division 1, rules for existing MSW landfills in 1998, the commission's analysis found that only one landfill (City of Killeen) which

closed within the relevant time period had an estimated emission rate above the control threshold of 50 Mg/yr, and that the Killeen landfill's emissions were projected to fall below the 50 Mg/yr control threshold by 2004. The commission also estimated that, using an alternate calculation method, the emissions from the landfill would be even lower, and would be "borderline" relative to the 50 Mg/yr threshold. The commission further determined that the cost of installing and operating a gas collection and control system for the landfill would be unreasonable based on the short period of time the facility was projected to be above the 50 Mg/yr threshold. (*See* 23 TexReg 10876, October 23, 1999.) In EPA's approval of the TCEQ's original state plan submittal, the EPA acknowledged that no designated landfills which closed between November 8, 1987, and October 9, 1993, would have estimated non-methane organic compounds (NMOC) emissions above the 50 megagram (Mg) control threshold, and that controlling these closed landfills would not result in a significant reduction in NMOC emissions compared to the cost to install gas collection systems. (*See* 64 FR 32428.) As many years have passed since the original Texas state plan was approved in 1999, none of the landfills which stopped accepting waste during the relevant 1987-1993 time period would have current NMOC emissions above the 50 Mg/year threshold. The previous state plan analysis and other supporting material relating to this proposed exemption is included in Appendix C.5 of the proposed state plan document.

Proposed subsection (b) allows an owner or operator of an MSW landfill to apply for

less stringent emission standards or longer compliance schedules, provided that the owner or operator demonstrates to the executive director and to the EPA that certain criteria are met. An exemption under subsection (b) may be requested based on unreasonable cost of control, the physical impossibility of installing control equipment, or other factors specific to the MSW landfill that make application of a less stringent standard or compliance deadline more reasonable. The proposed provisions of subsection (b) are carried over from functionally identical provisions in the EPA-approved Division 1 landfill rules at 30 TAC §113.2067. The proposed exemption is consistent with the federal requirements in 40 CFR §60.24(f) for obtaining a less stringent emission standard or compliance schedule.

Proposed subsection (c) contains language to clarify how an owner or operator of an affected MSW landfill would request an alternate emission standard or alternate compliance schedule. Requests should be submitted to the TCEQ Office of Air, Air Permits Division, and a copy should be provided to the EPA Region 6 office.

§113.2408, Federal Operating Permit requirements

The commission proposes new §113.2408 to address federal operating permit requirements for MSW landfills subject to the proposed Chapter 113, Subchapter D, Division 6, rules. Proposed §113.2408 requires that owners or operators of MSW landfills subject to Division 6 obtain a federal operating permit as required under 40 CFR §60.31f(c) and (d) and applicable requirements of 30 TAC Chapter 122, Federal

Operating Permits Program. Under 40 CFR §60.31f(c), a federal operating permit is not required for MSW landfills with a design capacity less than 2.5 million megagrams or 2.5 million cubic meters, unless the landfill is otherwise subject to the requirement to obtain an operating permit under 40 CFR Part 70 or 71. For purposes of submitting a timely application for an operating permit, the owner or operator of an MSW landfill with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters on the effective date of EPA approval of the Texas landfill state plan under §111(d) of the CAA, and not otherwise subject to either Part 70 or 71, becomes subject to the requirements of 40 CFR §70.5(a)(1)(i) or §71.5(a)(1)(i), 90 days after the effective date of the §111(d) state plan approval, even if the design capacity report is submitted earlier.

As stated in 40 CFR §60.31f(d), when an MSW landfill subject to the proposed Division 6 rules is closed (as defined in Subpart Cf) the owner or operator is no longer subject to the requirement to maintain an operating permit for the landfill if the landfill is not otherwise subject to the requirements of either Part 70 or 71 and either of the following conditions are met: (1) The landfill was never subject to the requirement to install and operate a gas collection and control system under 40 CFR §60.33f; or (2) the landfill meets the conditions for control system removal specified in 40 CFR §60.33f(f).

§113.2410, Initial and Annual Reporting, and Modified Reporting Requirements for Legacy Controlled Landfills

The commission proposes new §113.2410 to address certain initial reports and design plans which must be submitted to the executive director and to establish modified reporting requirements for legacy controlled landfills.

Proposed subsection (a) identifies the requirements for initial reports of design capacity, non-methane organic compound (NMOC) emissions, and initial gas collection and control system design plans. These proposed reporting requirements correspond to certain reports required by 40 CFR §60.38f and by the 40 CFR Part 62, Subpart OOO federal plan. The proposed subsection (a) rules do not require an owner or operator that has already submitted the specified reports to comply with the Subpart OOO federal plan to re-submit the reports to TCEQ unless specifically requested.

The commission is proposing an additional reporting requirement in 30 TAC §113.2410(a)(4) that would require owners or operators of existing MSW landfills to provide annual calculations of NMOC emissions. This proposed requirement is necessary to enable TCEQ to maintain current information on NMOC emissions from designated facilities covered by the proposed state plan and provide updated emissions inventory information to the EPA in compliance with federal annual progress report requirements of 40 CFR §60.25(e) and (f). The commission is proposing to exclude landfills with a capacity less than 2.5 million Mg by mass or 2.5 million cubic meters by volume from this annual NMOC inventory reporting requirement, as these small landfills are exempt from most substantive requirements

of 40 CFR Part 60, Subpart Cf and 40 CFR Part 62, Subpart OOO, and the NMOC calculation's results would not affect the applicable emission control requirements or monitoring requirements for these small sites. If a small site were to increase capacity above the 2.5 Mg or 2.5 million cubic meter threshold, the applicable control requirements and monitoring requirements for the site would be determined by the NMOC calculation methodology specified in 40 CFR Part 60, Subpart Cf.

For the annual NMOC emission inventory reports required by proposed §113.2410(a)(4), TCEQ is proposing that designated facilities use calculation methods specified in the EPA's *Compilation of Air Pollutant Emissions Factors* (AP-42), as opposed to the calculation methods specified in 40 CFR Part 60, Subpart Cf. The proposed use of AP-42 calculation methods for purposes of the emissions inventory, rather than the methods in 40 CFR Part 60, Subpart Cf, is in accordance with federal guidance for the implementation of §111(d) state plans for MSW landfills (EPA-456R/98-009, *Summary of the Requirements for Section 111(d) State Plans for Implementing the Municipal Solid Waste Landfills Emission Guidelines*). In this guidance, the EPA explains that the calculation methods (AP-42 vs. the emission guideline rule itself) are intentionally different, as the AP-42 methodology for emission inventories is designed to reflect typical or average landfill emissions, while the emission guideline rule methodology is purposefully conservative to protect human health, encompass a wide range of MSW landfills, and encourage the use of site-specific data.

At this time, the commission is not proposing a specific method that affected facilities would use to submit the annual NMOC emission inventory reports. The commission anticipates that an electronic method would facilitate more efficient collection and analysis of the data. The annual reporting might be implemented through modification of the commission's existing Annual Emissions Inventory Report (AEIR) system, the commission's existing e-permitting system, or through a separate portal or interface. The commission invites comment on possible methods for submittal of these annual NMOC inventory reports. Depending on the comments received and other factors, the commission may specify the method of reporting in the final rule, if adopted, or in guidance posted on the commission's website.

It should be noted that proposed 30 TAC §113.2410 does not comprehensively include all reporting requirements, and that owners or operators of MSW landfills subject to Subchapter D, Division 6, must also comply with any additional reporting requirements specified in 40 CFR §60.38f or elsewhere in 40 CFR Part 60, Subpart Cf, even if not specifically identified in §113.2410.

Proposed subsection (b) establishes certain exemptions from reporting requirements for legacy controlled landfills which have already submitted similar reports to comply with prior regulations that applied to MSW landfills. Specifically, the owner or operator of a legacy controlled landfill is not required to submit an initial design capacity report, initial or subsequent NMOC emission rate report, collection and control system

design plan, initial performance test report, or the initial annual report, if those report(s) were already provided under the requirements of 40 CFR Part 60, Subpart WWW, or the Chapter 113, Subchapter D, Division 1, rules. This proposed exemption corresponds to the approach EPA used for legacy controlled landfills in the 40 CFR Part 62, Subpart OOO, federal plan (specifically, 40 CFR §62.16711(h)). The commission has included this proposed provision because the approach the EPA used in the federal plan to address reporting for legacy controlled landfills is an improvement relative to the corresponding provisions of Subpart Cf. Existing landfills in Texas will have been operating under the requirements of the federal plan for some time prior to the EPA's approval of the proposed changes to Chapter 113, and maintaining consistency with this aspect of the federal plan should reduce the potential for confusion or noncompliance while having no adverse effect on emissions or the environment.

Proposed subsection (c) establishes that owners or operators of legacy controlled landfills that have already submitted an annual report under 40 CFR Part 60, Subpart WWW, or Chapter 113, Subchapter D, Division 1, are required to submit the following annual report under Division 6 no later than one year after the most recent annual report was submitted, as specified in 40 CFR §62.16724(h). This is a clarification of the timing requirements for the annual reports of legacy controlled landfills transitioning from the prior-effective landfill regulations (40 CFR Part 60 Subpart WWW, or Chapter 113, Subchapter D, Division 1) to the new Division 6 regulations. This proposed subsection corresponds to the approach EPA used for legacy controlled landfills in the

40 CFR Part 62, Subpart OOO, federal plan (specifically, 40 CFR §62.16724(h)). Existing landfills in Texas will have been operating under the requirements of the federal plan for some time prior to the EPA's approval of the proposed changes to Chapter 113 and maintaining consistency with this aspect of the federal plan should reduce the potential for confusion or noncompliance while having no adverse effect on emissions or the environment.

Proposed subsection (d) requires owners or operators of legacy controlled landfills that demonstrate compliance with the emission control requirements of Division 6 using a treatment system (as defined in 40 CFR §60.41f) to comply with 40 CFR §62.16724(d)(7). This requires the preparation of a site-specific treatment system monitoring plan no later than May 23, 2022. Legacy controlled landfills affected by this rule will have been required to prepare this plan by May 23, 2022, to comply with the federal plan, even though the proposed Subchapter D, Division 6, rules were not yet effective or approved by the EPA at that time. This proposed requirement maintains consistency with this aspect of the federal plan and ensures that TCEQ will have continuing authority to enforce this requirement for any legacy controlled landfills which fail to prepare the required treatment system monitoring plan.

§113.2412, Implementation Date and Increments of Progress

The commission proposes new §113.2412 to establish an implementation date and required increments of progress for the proposed Subchapter D, Division 6, rules.

Proposed subsection (a) contains language that requires owners or operators of existing MSWLF to comply with the Division 6 requirements beginning on the effective date of the EPA's approval of Texas' revised §111(d) state plan implementing the 2016 emission guidelines for existing MSW landfills. Prior to this implementation date, owners or operators of existing MSW landfills shall continue to comply with the Chapter 113, Subchapter D, Division 1, rules; 40 CFR Part 60, Subpart WWW; and/or 40 CFR Part 62, Subpart OOO, as applicable. On and after the implementation date specified in this subsection, owners or operators of existing MSW landfills would no longer be required to comply with the Chapter 113, Subchapter D, Division 1, requirements or the federal requirements of Subparts WWW or OOO.

Proposed subsection (b) requires owners or operators of MSW landfills subject to Subchapter D, Division 6, to comply with all applicable requirements of progress specified in 40 CFR Part 62, Subpart OOO, Table 1, as amended through May 21, 2021. These increments of progress set deadlines for certain milestones, such as the submittal of the cover page of the final control plan; the awarding of contracts; the beginning of on-site construction; the completion of on-site construction; and final compliance. The commission is proposing to require the same increments of progress as the 40 CFR Part 62 federal plan because the federal plan is already in effect, and maintaining consistency with the Subpart OOO requirements will minimize confusion and the potential for noncompliance for owners or operators who have already started

the process of designing and installing controls to comply with the federal plan. In addition, 40 CFR §62.16712(c)(1), indicates that facilities subject to the federal plan will remain subject to the schedule in Table 1, even if a subsequently approved state or tribal plan contains a less stringent schedule. As stated in footnote 2 of Subpart OOO, Table 1, increments of progress that have already been completed under previous regulations do not have to be completed again.

Fiscal Note: Costs to State and Local Government

Jené Bearse, Analyst in the Budget and Planning Division, has determined that for the first five-year period the proposed rules are in effect, no fiscal implications are anticipated for the agency or for other units of state or local government as a result of administration or enforcement of the proposed rules. The federal plan adopted under 40 CFR Part 62, Subpart OOO, may have a fiscal impact to units of local government, but the proposed transfer of regulatory authority to the agency does not change that fiscal impact.

Public Benefits and Costs

Ms. Bearse determined that for each year of the first five years the proposed rules are in effect, the public benefit of the proposed transfer anticipated would be a more accessible point of contact (TCEQ) for the public and the regulated community for the regulation of landfill emissions. Because this proposal designates the TCEQ as the implementing agency for federal emission guidelines for landfills, the public may also

utilize the Small Business and Local Government Assistance program (TexasEnviroHelp.org), which provides free technical assistance for the agency's regulatory programs.

The proposed rulemaking is not anticipated to result in fiscal implications for businesses or individuals. The federal plan adopted under 40 CFR Part 62, Subpart OOO, may have a fiscal impact to businesses or individuals, but the proposed transfer of regulatory authority to the agency does not change that fiscal impact.

Local Employment Impact Statement

The commission reviewed this proposed rulemaking and determined that a Local Employment Impact Statement is not required because the proposed rulemaking does not adversely affect a local economy in a material way for the first five years that the proposed rules are in effect.

Rural Communities Impact Assessment

The commission reviewed this proposed rulemaking and determined that the proposed rulemaking does not adversely affect rural communities in a material way for the first five years that the proposed rules are in effect. The amendments would apply statewide and have the same effect in rural communities as in urban communities.

Small Business and Micro-Business Assessment

No adverse fiscal implications are anticipated for small or micro-businesses due to the implementation or administration of the proposed rules for the first five-year period the proposed rules are in effect.

Small Business Regulatory Flexibility Analysis

The commission reviewed this proposed rulemaking and determined that a Small Business Regulatory Flexibility Analysis is not required because the proposed rules do not adversely affect a small or micro-business in a material way for the first five years the proposed rules are in effect.

Government Growth Impact Statement

The commission prepared a Government Growth Impact Statement assessment for this proposed rulemaking. The proposed rulemaking does not create or eliminate a government program and would not require an increase or decrease in future legislative appropriations to the agency. The proposed rulemaking does not require the creation of new employee positions, eliminate current employee positions, nor require an increase or decrease in fees paid to the agency. The proposed rulemaking does create a new regulation in Chapter 113, Subchapter D, Division 6. The proposed rulemaking phases out the requirement to comply with Chapter 113, Subchapter D, Division 1, but does not repeal it. The proposed rulemaking increases the number of individuals subject to landfill regulations under Chapter 113; however, those

individuals are regulated under the federal standards and other regulations by the agency. During the first five years, the proposed rules should not impact positively or negatively the state's economy.

Draft Regulatory Impact Analysis Determination

The commission reviewed the proposed rulemaking in light of the regulatory impact analysis requirements of Tex. Gov't Code Ann., §2001.0225, and determined that the proposed rulemaking does not meet the definition of a "Major environmental rule" as defined in that statute, and in addition, if it did meet the definition, would not be subject to the requirement to prepare a regulatory impact analysis. A "Major environmental rule" means a rule, the specific intent of which is to protect the environment or reduce risks to human health from environmental exposure, and that may adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. Additionally, the proposed rulemaking does not meet any of the four applicability criteria for requiring a regulatory impact analysis for a "Major environmental rule," which are listed in Tex. Gov't Code Ann., §2001.0225. Tex. Gov't Code Ann., §2001.0225 applies only to a major environmental rule the result of which is to: 1) exceed a standard set by federal law, unless the rule is specifically required by state law; 2) exceed an express requirement of state law, unless the rule is specifically required by federal law; 3) exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to

implement a state and federal program; or 4) adopt a rule solely under the general powers of the agency instead of under a specific state law.

The specific intent of these proposed rules is to comply with federal emission guidelines for existing municipal solid waste landfills mandated by 42 United States Code (U.S.C.), §7411 (Federal Clean Air Act (FCAA), §111); and required to be included in operating permits by 42 U.S.C., §7661a (FCAA, §502) as specified elsewhere in this preamble. These sources are required to comply with the federal emission guidelines whether or not the commission adopts rules to implement the federal emission guidelines. The sources are required to comply with federal plans adopted by EPA if states do not adopt state plans. As discussed in the FISCAL NOTE portion of this preamble, the proposed rules are not anticipated to add any significant additional costs to affected individuals or businesses beyond what is already required to comply with these federal standards for: the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state.

Under 42 U.S.C., §7661a (FCAA, §502), states are required to have federal operating permit programs that provide authority to issue permits and assure compliance with each applicable standard, regulation, or requirement under the FCAA; including emission guidelines, which are required under 42 U.S.C., §7411 (FCAA, §111). Similar to requirements in 42 U.S.C., §7410 (FCAA, §110) regarding the requirement to adopt

and implement plans to attain and maintain the national ambient air quality standards, states are not free to ignore requirements in 42 U.S.C., §7661a (FCAA, §502), and must develop and submit programs to provide for operating permits for major sources that include all applicable requirements of the FCAA. Additionally, states are required by 42 U.S.C., §7411 (FCAA, §111), to adopt and implement plans to implement and enforce emission guidelines promulgated by the EPA.

The requirement to provide a fiscal analysis of regulations in the Texas Government Code was amended by Senate Bill (SB) 633 during the 75th Legislature, 1997. The intent of SB 633 was to require agencies to conduct a regulatory impact analysis of extraordinary rules. Such rules are identified in the statutory language as major environmental rules that will have a material adverse impact and will exceed a requirement of state law, federal law or a delegated federal program, or are adopted solely under the general powers of the agency. With the understanding that this requirement would seldom apply, the commission provided a cost estimate for SB 633 that concluded "based on an assessment of rules adopted by the agency in the past, it is not anticipated that the bill will have significant fiscal implications for the agency due to its limited application." The commission also noted that the number of rules that would require assessment under the provisions of the bill was not large. This conclusion was based, in part, on the criteria set forth in the bill that exempted rules from the full analysis unless the rule was a major environmental rule that exceeds a federal law. Because of the ongoing need to meet federal requirements, the

commission routinely proposes and adopts rules designed to incorporate or satisfy specific federal requirements. The legislature is presumed to understand this federal scheme. If each rule proposed by the commission to meet a federal requirement was considered to be a major environmental rule that exceeds federal law, then each of those rules would require the full regulatory impact analysis (RIA) contemplated by SB 633. This conclusion is inconsistent with the conclusions reached by the commission in its cost estimate and by the Legislative Budget Board (LBB) in its fiscal notes. Since the legislature is presumed to understand the fiscal impacts of the bills it passes, and that presumption is based on information provided by state agencies and the LBB, the commission concludes that the intent of SB 633 was only to require the full RIA for rules that are extraordinary in nature.

While the proposed rules may have a broad impact, that impact is no greater than is necessary or appropriate to meet the requirements of the FCAA and in fact creates no additional impacts since the proposed rules do not modify the federal emission guidelines in any substantive aspect, but merely provide for minor administrative changes as described elsewhere in this preamble. For these reasons, the proposed rules fall under the exception in Texas Government Code, §2001.0225(a), because they are required by, and do not exceed, federal law. The commission has consistently applied this construction to its rules since this statute was enacted in 1997. Since that time, the legislature has revised the Texas Government Code, but left this provision substantially unamended. It is presumed that "when an agency interpretation is in

effect at the time the legislature amends the laws without making substantial change in the statute, the legislature is deemed to have accepted the agency's interpretation." *Central Power & Light Co. v. Sharp*, 919 S.W.2d 485, 489 (Tex. App. -- Austin 1995), *writ denied with per curiam opinion respecting another issue*, 960 S.W.2d 617 (Tex. 1997); *Mosley v. Tex. Health & Human Services Comm'n*, 593 S.W.3d 250 (Tex. 2019); *Tex. Ass'n of Appraisal Districts, Inc. v. Hart*, 382 S.W.3d 587 (Tex. App.--Austin 2012, no pet.); *Tex. Dep't of Protective & Regulatory Services v. Mega Child Care, Inc.*, 145 S.W.3d 170 (Tex. 2004).

The commission's interpretation of the regulatory impact analysis requirements is also supported by a change made to the Texas Administrative Procedure Act (APA) by the legislature in 1999. In an attempt to limit the number of rule challenges based upon APA requirements, the legislature clarified that state agencies are required to meet these sections of the APA against the standard of "substantial compliance," Tex. Gov't Code Ann., §2001.035. The legislature specifically identified Tex. Gov't Code Ann., §2001.0225, as falling under this standard. As discussed in this analysis and elsewhere in this preamble, the commission has substantially complied with the requirements of Tex. Gov't Code Ann., §2001.0225. The proposed rules implement the requirements of the FCAA as discussed in this analysis and elsewhere in this preamble.

The emission guidelines being proposed for incorporation are federal standards that are required by 42 U.S.C., §7411 (FCAA, §111), and are required to be included in

permits under 42 U.S.C., §7661a (FCAA, §502). They are proposed with only minor administrative changes and will not exceed any standard set by state or federal law. These proposed rules will not implement an express requirement of state law. The proposed rules do not exceed a requirement of a delegation agreement or a contract between state and federal government, as the EPA will delegate implementation and enforcement of the emission guidelines to Texas if this rulemaking is adopted and EPA approves the rules as part of the State Plan required by 42 U.S.C. §7411(d) (FCAA, §111(d)). The proposed rules were not developed solely under the general powers of the agency but are authorized by specific sections of Texas Health and Safety Code, Chapter 382 (also known as the Texas Clean Air Act), and the Texas Water Code, which are cited in the STATUTORY AUTHORITY section of this preamble, including Texas Health and Safety Code, §§382.011, 382.012, and 382.017. Therefore, this proposed rulemaking action is not subject to the regulatory analysis provisions of Tex. Gov't Code Ann., §2001.0225(b).

The commission invites public comment regarding the Draft Regulatory Impact Analysis Determination during the public comment period. Written comments on the Draft Regulatory Impact Analysis Determination may be submitted to the contact person at the address listed under the Submittal of Comments section of this preamble.

Takings Impact Assessment

The commission evaluated the proposed rulemaking and performed an assessment of whether the requirements of Tex. Gov't Code Ann., Chapter 2007, are applicable. Under Tex. Gov't Code Ann., §2007.002(5), "taking" means a governmental action that affects private real property, in whole or in part, or temporarily or permanently, in a manner that requires the governmental entity to compensate the private real property owner as provided by the Fifth and Fourteenth Amendments to the United States Constitution or §17 or §19, Article I, Texas Constitution; or a governmental action that affects an owner's private real property that is the subject of the governmental action, in whole or in part or temporarily or permanently, in a manner that restricts or limits the owner's right to the property that would otherwise exist in the absence of the governmental action; and is the producing cause of a reduction of at least 25 percent in the market value of the affected private real property, determined by comparing the market value of the property as if the governmental action is not in effect and the market value of the property determined as if the governmental action is in effect.

The commission completed a takings impact analysis for the proposed rulemaking action as required by Tex. Gov't Code Ann., §2007.043. The primary purpose of this proposed rulemaking action, as discussed elsewhere in this preamble, is to propose rules to implement the federal emission guidelines for municipal solid waste landfills, mandated by 42 U.S.C., §7411 (FCAA, §111), and required to be included in operating permits by 42 U.S.C., §7661a (FCAA, §502), to facilitate implementation and

enforcement of the emission guidelines by the state. States are also required to submit state plans for the implementation and enforcement of the emission guidelines to EPA for its review and approval.

Tex. Gov't Code Ann., §2007.003(b)(4), provides that the requirements of Chapter 2007 of the Texas Government Code do not apply to this proposed rulemaking because it is an action reasonably taken to fulfill an obligation mandated by federal law. In addition, the commission's assessment indicates that Texas Government Code Chapter 2007 does not apply to these proposed rules because this action is taken in response to a real and substantial threat to public health and safety; that is designed to significantly advance the health and safety purpose; and that it does not impose a greater burden than is necessary to achieve the health and safety purpose. For the reasons stated above, this action is exempt under Tex. Gov't Code Ann. §2007.003(b)(13).

Any reasonable alternative to the proposed rulemaking would be excluded from a takings analysis required under Chapter 2007 of the Texas Government Code for the same reasons as elaborated in this analysis. As discussed in this preamble, states are not free to ignore the federal requirements to implement and enforce the federal emission guidelines for municipal solid waste landfills, including the requirement to submit state plans for the implementation and enforcement of the emission guidelines to EPA for its review and approval; nor are they free to ignore the federal requirement to include the emission guideline requirements in state issued federal operating

permits. If the state does not adopt the proposed rules, the federal rules will continue to apply, and sources must comply with a federal plan that implements those rules. The proposed rules present as narrowly tailored an approach to complying with the federal mandate as possible without unnecessary incursion into possible private real property interests. Consequently, the proposed rules will not create any additional burden on private real property. The proposed rules will not affect private real property in a manner that would require compensation to private real property owners under the United States Constitution or the Texas Constitution. The proposal also will not affect private real property in a manner that restricts or limits an owner's right to the property that would otherwise exist in the absence of the governmental action. Therefore, the proposed rulemaking will not cause a taking under Texas Government Code, Chapter 2007; nor does the Texas Government Code, Chapter 2007, apply to the proposed rulemaking.

Consistency with the Coastal Management Program

The commission reviewed the proposed rulemaking and found that the proposal is subject to the Texas Coastal Management Program (CMP) in accordance with the Coastal Coordination Act, Texas Natural Resources Code, §§33.201 et seq., and therefore must be consistent with all applicable CMP goals and policies. The commission conducted a consistency determination for the proposed rules in accordance with Coastal Coordination Act implementation rules, 31 TAC §505.22, and found the proposed rulemaking is consistent with the applicable CMP goals and

policies.

The CMP goal applicable to this proposed rulemaking is the goal to protect, preserve, restore, and enhance the diversity, quality, quantity, functions, and values of coastal natural resource areas (31 TAC §501.12(l)). The proposed amendments to Chapter 113 would update TCEQ rules to implement federal emission guidelines for existing landfills under 40 CFR Part 60, Subpart Cf. These guidelines require certain landfills to install and operate gas collection systems to capture and control emissions. The CMP policy applicable to the proposed rulemaking is the policy that commission rules comply with federal regulations in 40 CFR to protect and enhance air quality in the coastal areas (31 TAC §501.32). This rulemaking also complies with applicable requirements of 40 CFR Part 60, Subpart B, Adoption and Submittal of State Plans for Designated Facilities.

Written comments on the consistency of this rulemaking may be submitted to the contact person at the address listed under the Submittal of Comments section of this preamble.

Effect on Sites Subject to the Federal Operating Permits Program

Sites which would be required to obtain a federal operating permit under proposed §113.2408 are already required to obtain a federal operating permit under existing federal regulations. The proposed Subchapter D, Division 6, rules would be applicable

requirements under 30 TAC Chapter 122, Federal Operating Permits Program. If the proposed rules are adopted, owners or operators of affected sites subject to the federal operating permit program and these rules must, consistent with the revision process in Chapter 122, upon the effective date of the rulemaking, revise their operating permit to include the new Chapter 113 requirements.

Announcement of Hearing

The commission will hold a hybrid in-person and virtual public hearing on this proposal in Austin on February 23, 2023, at 10:00 a.m. in Building D, Room 191, at the commission's central office located at 12100 Park 35 Circle. The hearing is structured for the receipt of oral or written comments by interested persons. Individuals may present oral statements when called upon in order of registration. Open discussion will not be permitted during the hearing; however, commission staff members will be available to discuss the proposal 30 minutes prior to the hearing.

Registration

Individuals who plan to attend the hearing virtually and want to provide oral comments and/or want their attendance on record must register by Tuesday, February 21, 2023. To register for the hearing, please email *Rules@tceq.texas.gov* and provide the following information: your name, your affiliation, your email address, your phone number, and whether or not you plan to provide oral comments during the hearing. Instructions for participating in the hearing will be sent on Wednesday, February 22,

2023, to those who register for the hearing.

Members of the public who do not wish to provide oral comments but would like to view the hearing virtually may do so at no cost at: https://teams.microsoft.com/l/meetup-join/19%3ameeting_MzRjOGJmNTktODQxNy00MWY2LWE1MTAtODk0ZTY4MTllYTg4%40thread.v2/0?context=%7b%22Tid%22%3a%22871a83a4-a1ce-4b7a-8156-3bcd93a08fba%22%2c%22Oid%22%3a%22e74a40ea-69d4-469d-a8ef-06f2c9ac2a80%22%2c%22IsBroadcastMeeting%22%3atrue%7d

Persons who have special communication or other accommodation needs who are planning to attend the hearing should contact Sandy Wong, Office of Legal Services at (512) 239-1802 or 1-800-RELAY-TX (TDD). The hearing will be conducted in English. Language interpretation services may be requested. Requests should be made as far in advance as possible.

Submittal of Comments

Written comments may be submitted to Cecilia Mena, MC 205, Office of Legal Services, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087, or faxed to *fax4808@tceq.texas.gov*. Electronic comments may be submitted through the TCEQ Public Comments system at: *https://tceq.commentinput.com/comment/search*. File size restrictions may apply to

comments being submitted electronically. All comments should reference Rule Project Number 2017-014-113-AI. The comment period closes on February 28, 2023. Copies of the proposed rulemaking can be obtained from the commission's website at *https://www.tceq.texas.gov/rules/propose_adopt.html*. For further information, please contact Michael Wilhoit, Air Permits Division, (512) 239-1222.

SUBCHAPTER D: DESIGNATED FACILITIES AND POLLUTANTS

DIVISION 1: MUNICIPAL SOLID WASTE LANDFILLS

§113.2069

Statutory Authority

The amended section is proposed under Texas Water Code (TWC), §5.102, concerning General Powers, TWC, §5.103, concerning Rules, and TWC, §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties; and under Texas Health and Safety Code (THSC), §382.017, concerning Rules, which authorizes the commission to adopt rules consistent with the policy and purpose of the Texas Clean Air Act. The amended section is also proposed under THSC, §382.002, concerning Policy and Purpose, which establishes the commission's purpose to safeguard the state's air resources, consistent with the protection of public health, general welfare, and physical property; THSC, §382.011, concerning General Powers and Duties, which authorizes the commission to control the quality of the state's air; THSC, §382.012, concerning State Air Control Plan, which authorizes the commission to prepare and develop a general, comprehensive plan for the proper control of the state's air; THSC, §382.014, concerning Emission Inventory, which authorizes the commission to require a person whose activities cause air contaminant emissions to submit information to enable the commission to develop an emissions inventory; THSC, §382.015, concerning Power to Enter Property, which authorizes a member, employee, or agent of the commission to enter public or private

property to inspect and investigate conditions relating to emissions of air contaminants to or the concentration of air contaminants in the atmosphere; THSC, §382.016, concerning Monitoring Requirements; Examination of Records, which authorizes the commission to prescribe reasonable requirements for measuring and monitoring the emissions of air contaminants, as well as require recordkeeping; THSC, §382.021, concerning Sampling Methods and Procedures, which authorizes the commission to prescribe sampling methods and procedures; THSC, §382.022, concerning Investigations, which authorizes the commission to make or require the making of investigations; and THSC, §382.051, concerning Permitting Authority of Commission; Rules, which authorizes the commission to adopt rules as necessary to comply with changes in federal law or regulations applicable to permits issued under the Texas Clean Air Act.

The proposed amended section implements TWC, §§5.102-5.103, and 5.105; as well as THSC, §§382.002, 382.011 - 382.017, 382.021-382.022, and 382.051.

§113.2069. Compliance Schedule and Transition to 2016 Landfill Emission Guidelines.

(a) An owner or operator subject to the requirements of this division shall submit the initial design capacity report in accordance with 40 Code of Federal Regulations (CFR) Part 60, §60.757(a)(2) to the executive director within 90 days from

the date the commission publishes notification in the [Texas Register] *Texas Register* that the United States Environmental Protection Agency (EPA) has approved this rule.

(b) An owner or operator of a municipal solid waste landfill with a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters and subject to the requirements of this division shall also submit the initial non-methane organic compound emission rate report in accordance with 40 CFR §60.757(b)(2) to the executive director within 90 days from the date the commission publishes notification in the [Texas Register] *Texas Register* that EPA has approved this rule.

(c) On and after the implementation date specified in §113.2412 of this title, owners or operators of landfills subject to the requirements of this division shall instead comply with the applicable requirements of Division 6 of this subchapter.

SUBCHAPTER D: DESIGNATED FACILITIES AND POLLUTANTS

DIVISION 6: 2016 EMISSION GUIDELINES FOR EXISTING MUNICIPAL SOLID WASTE LANDFILLS

§§113.2400, 113.2402, 113.2404, 113.2406, 113.2408, 113.2410, 113.2412

Statutory Authority

The new sections are proposed under Texas Water Code (TWC), §5.102, concerning General Powers, TWC, §5.103, concerning Rules, and TWC, §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties; and under Texas Health and Safety Code (THSC), §382.017, concerning Rules, which authorizes the commission to adopt rules consistent with the policy and purpose of the Texas Clean Air Act. The new sections are also proposed under THSC, §382.002, concerning Policy and Purpose, which establishes the commission's purpose to safeguard the state's air resources, consistent with the protection of public health, general welfare, and physical property; THSC, §382.011, concerning General Powers and Duties, which authorizes the commission to control the quality of the state's air; THSC, §382.012, concerning State Air Control Plan, which authorizes the commission to prepare and develop a general, comprehensive plan for the proper control of the state's air; THSC, §382.014, concerning Emission Inventory, which authorizes the commission to require a person whose activities cause air contaminant emissions to submit information to enable the commission to develop an emissions inventory; THSC, §382.015, concerning Power to Enter Property, which

authorizes a member, employee, or agent of the commission to enter public or private property to inspect and investigate conditions relating to emissions of air contaminants to or the concentration of air contaminants in the atmosphere; THSC, §382.016, concerning Monitoring Requirements; Examination of Records, which authorizes the commission to prescribe reasonable requirements for measuring and monitoring the emissions of air contaminants, as well as require recordkeeping; THSC, §382.021, concerning Sampling Methods and Procedures, which authorizes the commission to prescribe sampling methods and procedures; THSC, §382.022, concerning Investigations, which authorizes the commission to make or require the making of investigations; and THSC, §382.051, concerning Permitting Authority of Commission; Rules, which authorizes the commission to adopt rules as necessary to comply with changes in federal law or regulations applicable to permits issued under the Texas Clean Air Act. The new sections are also proposed under TWC, §7.002, Enforcement Authority, which authorizes the commission to institute legal proceedings to compel compliance; TWC, §7.032, Injunctive Relief, which provides that injunctive relief may be sought by the executive director; and TWC, §7.302, Grounds for Revocation or Suspension of Permit, which provides authority to the commission to revoke or suspend any air quality permit.

The proposed new sections implement TWC, §§5.102 - 5.103, and 5.105; as well as THSC, §§382.002, 382.011 - 382.017, 382.021 - 382.022 and 382.051.

§113.2400. Applicability.

(a) The requirements of this division apply to existing municipal solid waste landfills (MSWLFs) for which construction, reconstruction, or modification was commenced on or before July 17, 2014, except for landfills exempted under §113.2406 of this title (relating to Exemptions, Alternate Emission Standards, and Alternate Compliance Schedules).

(b) Physical or operational changes made to an existing MSWLF solely to comply with these emission guidelines are not considered a modification or reconstruction and would not subject an existing MSWLF to the requirements of a standard of performance for new MSWLFs (such as 40 Code of Federal Regulations (CFR) Part 60, Subpart XXX).

(c) The requirements of this division do not apply to landfills which are subject to 40 CFR Part 60, Subpart XXX (Standards of Performance for Municipal Solid Waste Landfills that Commenced Construction, Reconstruction, or Modification after July 17, 2014).

(d) The requirements of this division do not apply until the implementation date specified in §113.2412 of this title (relating to Implementation Date and Increments of Progress).

§113.2402. Definitions.

(a) Except as provided in subsections (b) and (c) of this section, the terms used in this division are defined in 40 CFR §60.2 as amended through May 16, 2007, and 40 CFR §60.41f as amended through March 26, 2020, which are incorporated by reference.

(b) The term "Administrator" wherever it appears in 40 CFR Part 60, §§60.30f - 60.41f, shall refer to the commission, except for purposes of 40 CFR §60.35f(a)(5). For purposes of 40 CFR §60.35f(a)(5), the term "Administrator" means the Administrator of the U.S. Environmental Protection Agency.

(c) Legacy controlled landfill--any municipal solid waste landfill subject to this division that submitted a gas collection and control system (GCCS) design plan prior to May 21, 2021, in compliance with 40 CFR §60.752(b)(2)(i) or 30 TAC §113.2061 of this title (relating to Standards for Air Emissions), depending on which regulation was applicable to the landfill. This definition applies to those landfills that completed construction and began operations of the GCCS and those that are within the 30-month timeline for installation and start-up of a GCCS according to 40 CFR §60.752(b)(2)(ii), or the requirements of 30 TAC Chapter 113, Subchapter D, Division 1.

§113.2404. Standards for Existing Municipal Solid Waste Landfills.

(a) Except as specifically provided otherwise in §§113.2400 - 113,2412 of this title, an owner or operator of an existing municipal solid waste landfill (MSWLF) subject to the requirements of this division shall comply with the applicable provisions specified in 40 CFR Part 60, Subpart Cf, as follows:

(1) 40 CFR §60.31f, relating to Designated Facilities, as amended through August 29, 2016;

(2) 40 CFR §60.32f, relating to Compliance Times, as amended through August 29, 2016;

(3) 40 CFR §60.33f, relating to Emission Guidelines for municipal solid waste landfill emissions, as amended through August 29, 2016;

(4) 40 CFR §60.34f, relating to Operational Standards for collection and control systems, as amended through March 26, 2020;

(5) 40 CFR §60.35f, relating to Test methods and procedures, as amended through August 29, 2016;

(6) 40 CFR §60.36f, relating to Compliance provisions, as amended through March 26, 2020;

(7) 40 CFR §60.37f, relating to Monitoring of operations, as amended through March 26, 2020;

(8) 40 CFR §60.38f, relating to Reporting guidelines, as amended through March 26, 2020;

(9) 40 CFR §60.39f, relating to Recordkeeping guidelines, as amended through March 26, 2020; and

(10) 40 CFR §60.40f, relating to Specifications for active collection systems, as amended through August 29, 2016.

(b) Gas collection and control systems approved by the commission and installed at an MSWLF in compliance with §115.152 of this title (relating to Control Requirements), satisfy the gas collection and control system design requirements of 40 CFR §60.33f(b) and (c) for purposes of this section.

(c) Legacy controlled landfills or landfills in the closed landfill subcategory that have already installed control systems and completed initial or subsequent

performance tests may comply with this division using the initial or most recent performance test conducted to comply with 40 CFR Part 60, Subpart WWW, or 30 TAC Chapter 113, Subchapter D, Division 1 of this title.

(d) Legacy controlled landfills shall comply with the requirements of 40 CFR §62.16714(b)(1), as amended through May 21, 2021, in lieu of the requirements of 40 CFR §60.33f(b)(1).

§113.2406. Exemptions, Alternate Emission Standards, and Alternate Compliance Schedules.

(a) A municipal solid waste landfill (MSWLF) meeting the following conditions is not subject to the requirements of this division:

(1) The MSWLF has not accepted waste at any time since October 9, 1993; and

(2) The MSWLF does not have additional design capacity available for future waste deposition, regardless of whether the MSWLF is currently open or closed.

(b) A MSWLF may apply for less stringent emission standards or longer compliance schedules than those otherwise required by this division, provided that the owner or operator demonstrates to the executive director and EPA, the following:

(1) unreasonable cost of control resulting from MSWLF age, location, or basic MSWLF design;

(2) physical impossibility of installing necessary control equipment; or

(3) other factors specific to the MSWLF that make application of a less stringent standard or final compliance time significantly more reasonable.

(c) Owners or operators requesting alternate emission standards or compliance schedules under subsection (b) of this section shall submit requests and supporting documentation to the TCEQ Office of Air, Air Permits Division and provide a copy to the United States Environmental Protection Agency, Region 6.

§113.2408. Federal Operating PermitRequirements.

The owner or operator of an existing municipal solid waste landfill subject to the requirements of this division shall comply with the applicable requirements of 40 CFR §60.31f(c) and (d), and 30 TAC Chapter 122, Federal Operating Permits Program, relating to the requirement to obtain and maintain a federal operating permit.

§113.2410. Initial and Annual Reporting, and Modified Reporting Requirements for

Legacy Controlled Landfills.

(a) An owner or operator of a municipal solid waste landfill (MSWLF) subject to the requirements of this division shall comply with the following reporting requirements, except as otherwise specified for legacy controlled landfills in subsections (b) - (d) of this section.

(1) The owner or operator shall submit the initial design capacity report in accordance with 40 CFR Part 60, §60.38f(a), to the executive director within 90 days from the implementation date specified in §113.2412 of this title (relating to Implementation Date and Increments of Progress). Owners or operators that have already submitted an initial design capacity report to EPA to satisfy 40 CFR §62.16724 are not required to submit the report again, unless specifically requested by the executive director.

(2) An owner or operator of anMSWLF with a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters and subject to the requirements of this division shall also submit the initial non-methane organic compound (NMOC) emission rate report in accordance with 40 CFR §60.38f(c) to the executive director within 90 days from the implementation date specified in §113.2412 of this title. Owners or operators that have already submitted an initial NMOC report to

EPA to satisfy 40 CFR §62.16724 are not required to submit the report again, unless specifically requested by the executive director.

(3) An owner or operator of anMSWLF subject to the requirements of this division shall comply with applicable requirements of 40 CFR §60.38f(d) and (e) concerning the submittal of a site-specific gas collection and control system design plan to the executive director. Owners or operators that have already submitted a design plan to EPA to satisfy 40 CFR §62.16724 are not required to submit the design plan again, unless specifically requested by the executive director.

(4) Owners or operators of an MSWLF subject to the requirements of this division shall provide to the executive director an annual emission inventory report of landfill-generated non-methane organic compound (NMOC) emissions. This annual NMOC emission inventory report is not required for an MSWLF with a capacity less than 2.5 million megagramsby mass or 2.5 million cubic meters by volume. This annual NMOC emission inventory report is separate and distinct from any initial or annual NMOC emission rate reports required under 40 CFR §60.38f.

(A) Annual NMOC emission inventory reports required under this paragraph shall include the landfill's uncontrolled and (if equipped with a control system) controlled NMOC emissions in megagrams per year (Mg/yr) for the preceding calendar year. For purposes of these annual emission inventory reports,

NMOC emissions will be calculated using the procedures specified in the U.S. EPA's *Compilation of Air Pollutant Emissions Factors* (AP-42). Note that the use of AP-42 calculations for these annual NMOC emission inventory reports is different from the calculation method that is required for NMOC emission rate reports prepared for purposes of 40 CFR Part 60, Subpart Cf or 40 CFR Part 62, Subpart OOO.

(B) Annual NMOC emission inventory reports required under this paragraph shall be submitted no later than March 31 of each year following the calendar reporting year. These reports shall be submitted using the method designated by the executive director.

(5) This section only addresses certain specific reports for MSWLFs which are subject to this division. Owners or operators of an MSWLF subject to this division shall also comply with any additional reporting requirements specified in 40 CFR §60.38f or elsewhere in 40 CFR Part 60, Subpart Cf, except as otherwise specified for legacy controlled landfills in subsections (b) - (d) of this section.

(b) Owners or operators of legacy controlled landfills are not required to submit the following reports, provided these reports were submitted under 40 CFR Part 60, Subpart WWW, or Chapter 113, §113.2061 (relating to Standard for Air Emissions), on or before June 21, 2021:

(1) Initial design capacity report specified in 40 CFR §60.38f(a);

(2) Initial or subsequent NMOC emission rate report specified in 40 CFR §60.38f(c);

(3) Collection and control system design plan specified in 40 CFR §60.38f(d);

(4) Initial annual report specified in 40 CFR §60.38f(h); and

(5) Initial performance test report specified in 40 CFR §60.38(f)(i).

(c) Owners or operators of legacy controlled landfills that have already submitted an annual report under 40 CFR Part 60, Subpart WWW, or Chapter 113, Division 1, of this title, are required to submit the annual report under this divisionno later than one year after the most recent annual report was submitted.

(d) Owners or operators of legacy controlled landfills that demonstrate compliance with the emission control requirements of this division using a treatment system as defined in 40 CFR §60.41f must comply with 40 CFR §62.16724(d)(7) as amended through May 21, 2021.

§113.2412. Implementation Date and Increments of Progress.

(a) Upon the effective date of United States Environmental Protection Agency (EPA) approval of the Texas §111(d) state plan for the implementation of 40 Code of Federal Regulations (CFR) Part 60, Subpart Cf (Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills), owners or operators of municipal solid waste landfills (MSWLFs) covered by the applicability provisions of §113.2400(a) of this title (relating to Applicability), must comply with the requirements of this division.

(b) Owners or operators of an MSWLF subject to this division shall comply with all applicable increments of progress specified in 40 CFR Part 62, Subpart OOO, Table 1, as amended through May 21, 2021.

APPENDIX C.3

Inventory of Existing Texas MSW Landfill Sites and NMOC Emissions

Appendix C.3: Inventory of Existing Texas MSW Landfill Sites and NMOC Emissions.

I. Source Inventory

Table C.3.1 below lists active, existing MSW landfills in Texas as of September 2021 which are potentially subject to the proposed Chapter 113 rules and §111(d) state plan. This table includes permitted Type I, Type I Arid-Exempt (AE), and Type I AE and Type IV AE MSW landfills. This list may not be determinative of whether any particular landfill would be subject to the control requirements of the proposed Chapter 113 rules. The proposed Chapter 113 rules include complete, self-contained applicability provisions which will determine applicability for any particular landfill.

This table excludes landfills that permit records indicate to be subject to 40 CFR Part 60 Subpart XXX, as those landfills would not be covered by the new Chapter 113 rules and §111(d) state plan. This table also excludes Type IV and solely Type IV AE landfills, which do not accept household or putrescible wastes and therefore would not be subject to the emission guidelines of Subpart Cf.

Table C.3.1: Active Existing MSW Landfills in Texas

County	Permit No.	Name	Type
ANDREWS	171	CITY OF ANDREWS LANDFILL	1AE & 4AE
ANGELINA	2105A	ANGELINA COUNTY LANDFILL	1
BAILEY	2291A	CITY OF MULESHOE LANDFILL	1AE & 4AE
BEXAR	1410C	TESSMAN ROAD LANDFILL	1
BEXAR	2093B	COVEL GARDENS LANDFILL	1
BRAZORIA	1539C	SEABREEZE ENVIRONMENTAL LANDFILL	1
BREWSTER	1276	PANTHER JUNCTION LANDFILL	1AE
BREWSTER	2197	CITY OF ALPINE LANDFILL	1AE & 4AE
BROWN	1562A	REGIONAL LANDFILL OF BROWNWOOD	1
CAMERON	1273A	CITY OF BROWNSVILLE LANDFILL	1
CARSON	1164	CITY OF PANHANDLE MUNICIPAL SOLID WASTE LANDFILL	1AE
CASTRO	445A	CITY OF DIMMITT MUNICIPAL SOLID WASTE LANDFILL	1AE
CHAMBERS	1502A	CHAMBERS COUNTY LANDFILL	1
CHAMBERS	1535B	BAYTOWN LANDFILL FACILITY	1
CHEROKEE	1614A	ROYAL OAKS LANDFILL	1
CHILDRESS	2263	CITY OF CHILDRESS MUNICIPAL SOLID WASTE LANDFILL	1AE & 4AE
COLLIN	2294	121 REGIONAL DISPOSAL LANDFILL	1
COLLINGSWORTH	955	CITY OF WELLINGTON LANDFILL	1AE
COLORADO	203A	ALTAIR DISPOSAL SERVICES LLC LANDFILL	1
COMAL & GUADALUPE	66B	MESQUITE CREEK LANDFILL	1
CORYELL	1866	FORT HOOD LANDFILL	1
CRANE	2345	CITY OF CRANE LANDFILL	1AE & 4AE
CULBERSON	693A	CITY OF VAN HORN LANDFILL	1AE
DALLAM	1038A	CITY OF DALHART LANDFILL	1AE & 4AE

County	Permit No.	Name	Type
DALLAS	1394B	HUNTER FERRELL LANDFILL	1
DALLAS	1895A	CHARLES M HINTON JR REGIONAL LANDFILL	1
DALLAS	62	MCCOMMAS BLUFF LANDFILL	1
DALLAS	996C	CITY OF GRAND PRAIRIE LANDFILL	1
DAWSON	517A	CITY OF LAMESA LANDFILL	1
DENTON	1025B	DFW RECYCLING AND DISPOSAL FACILITY	1
DENTON	1590B	CITY OF DENTON LANDFILL	1
DIMMIT	2225	CITY OF CARRIZO SPRINGS LANDFILL	1AE
ECTOR	2158	ODESSA LANDFILL	1
EL PASO	729B	MCCOMBS LANDFILL	1
EL PASO	2284	GREATER EL PASO LANDFILL	1
ELLIS	1209B	CSC DISPOSAL AND LANDFILL	1
ELLIS	1745B	ECD LANDFILL	1
FLOYD	2207	CITY OF FLOYDADA LANDFILL	1AE & 4AE
FORT BEND	1505A	BLUE RIDGE LANDFILL	1
FORT BEND	2270	FORT BEND REGIONAL LANDFILL	1
GAINES	39	CITY OF SEMINOLE LANDFILL	1AE & 4AE
GALVESTON	1721A	COASTAL PLAINS RECYCLING AND LANDFILL FACILITY	1
GARZA	2227	CITY OF POST LANDFILL	1AE & 4AE
GILLESPIE	1995	CITY OF FREDERICKSBURG LANDFILL	1
GLASSCOCK	2154	GLASSCOCK COUNTY LANDFILL	1AE
GRAY	2238	CITY OF PAMPA LANDFILL	1
GRAY	570	CITY OF MCLEAN LANDFILL	1AE
GRAYSON	523B	HILLSIDE LANDFILL AND RECYLING CENTER	1
GRAYSON	2290	TASWA SOLID WASTE DISPOSAL AND RECYCLING FACILITY	1
GREGG	1327B	PINE HILL FARMS LANDFILL TX LP	1
GRIMES	2292	TWIN OAKS LANDFILL	1
HALE	2157	CITY OF PLAINVIEW LANDFILL	1
HALL	2266	CITY OF MEMPHIS LANDFILL	1AE
HANSFORD	2352	CITY OF SPEARMAN MUNICIPAL SOLID WASTE LANDFILL	1AE
HARDIN	2214B	HARDIN COUNTY LANDFILL	1
HARRIS	261B	MCCARTY ROAD LANDFILL	1
HARRIS	1193	WHISPERING PINES LANDFILL	1
HARRIS	1307D	WM ATASCOCITA RECYCLING DISPOSAL FACILITY	1
HASKELL	1604B	CITY OF HASKELL LANDFILL	1AE & 4AE
HIDALGO	956C	CITY OF EDINBURG LANDFILL	1
HIDALGO	2348	LA GLORIA RANCH LANDFILL	1
HILL	241D	ITASCA LANDFILL	1
HOCKLEY	2369	CITY OF LEVELLAND	1AE & 4AE
HOWARD	288A	CITY OF BIG SPRING LANDFILL	1
HOWARD	2395	BIG SPRING LANDFILL	1
HUDSPETH	495	HUDSPETH COUNTY LANDFILL	1AE & 4AE
HUDSPETH	957A	SIERRA BLANCA LANDFILL	1AE & 4AE
HUNT	1195B	REPUBLIC MALOY LANDFILL	1
JEFFERSON	1486B	CITY OF BEAUMONT LANDFILL	1

County	Permit No.	Name	Type
JEFFERSON	1815A	CITY OF PORT ARTHUR LANDFILL	1
JEFFERSON	2027	GOLDEN TRIANGLE LANDFILL	1
JIM WELLS	262C	CITY OF ALICE LANDFILL	1
JOHNSON	534	CITY OF CLEBURNE LANDFILL	1
JONES	1469A	ABILENE LANDFILL TX LP	1
JONES	2325	ABILENE ENVIRONMENTAL LANDFILL INC	1
KERR	1506B	CITY OF KERRVILLE LANDFILL	1
KINNEY	2354	FORT CLARK SPRINGS ASSOCIATION INC LANDFILL	1AE
KLEBERG	235C	CITY OF KINGSVILLE LANDFILL	1
LAMAR	2358	BLOSSOM PRAIRIE LANDFILL	1
LAMB	583A	CITY OF OLTON LANDFILL	1AE & 4AE
LAMB	2274	LITTLEFIELD MUNICIPAL LANDFILL	1AE & 4AE
LIMESTONE	1558A	MEXIA LANDFILL	1
LIPSCOMB	1943	CITY OF BOOKER LANDFILL	1AE
LUBBOCK	69	CITY OF LUBBOCK LANDFILL	1
LUBBOCK	2252	WEST TEXAS REGIONAL DISPOSAL LANDFILL	1
LYNN	2328A	CITY OF TAHOKA	1AE & 4AE
MARTIN	2189	CITY OF STANTON LANDFILL	1AE
MASON	2399	MASON EAST MSW LANDFILL	1
MASON	195	CITY OF MASON LANDFILL	1AE
MAVERICK	2316	MAVERICK COUNTY EL INDIO MSW LANDFILL	1
MCCULLOCH	1732	CITY OF BRADY LANDFILL	1AE & 4AE
MCLENNAN	1646A	LACY-LAKEVIEW RECYCLING AND DISPOSAL FACILITY	1
MCLENNAN	948A	CITY OF WACO LANDFILL	1
MCMULLEN	571A	MCMULLEN COUNTY LANDFILL	1AE
MIDLAND	1605B	CITY OF MIDLAND LANDFILL	1
MITCHELL	420B	CITY OF COLORADO CITY LANDFILL	1AE & 4AE
MONTGOMERY	1752B	SECURITY RECYCLING AND DISPOSAL FACILITY	1
MOORE	2279	CITY OF DUMAS LANDFILL	1
MOTLEY	549A	CITY OF MATADOR LANDFILL	1AE
NACOGDOCHES	720	CITY OF NACOGDOCHES LANDFILL	1
NAVARRO	2190	CITY OF CORSICANA LANDFILL	1
NEWTON	2242A	NEWTON COUNTY REGIONAL SOLID WASTE COMPLEX	1
NUECES	2267	EL CENTRO LANDFILL	1
NUECES	2269	CITY OF CORPUS CHRISTI LANDFILL	1
OCHILTREE	876A	PERRYTON MUNICIPAL SOLID WASTE LANDFILL	1AE & 4AE
PARKER	47A	CITY OF WEATHERFORD LANDFILL	1
PECOS	976	CITY OF FORT STOCKTON LANDFILL	1AE & 4AE
POLK	1384A	POLK COUNTY LANDFILL	1
POTTER	73A	CITY OF AMARILLO LANDFILL	1
PRESIDIO	1737A	CITY OF PRESIDIO LANDFILL	1AE
REAGAN	86B	CITY OF BIG LAKE LANDFILL	1AE
REEVES	2120A	CITY OF PECOS LANDFILL	1AE & 4AE
RUSK	1249B	IESI EAST TEXAS REGIONAL LANDFILL	1
SCHLEICHER	2264	CITY OF ELDORADO LANDFILL	1AE

County	Permit No.	Name	Type
SCURRY	1463B	CITY OF SNYDER LANDFILL	1
SMITH	1972A	GREENWOOD FARMS LANDFILL	1
SWISHER	1009A	CITY OF TULIA MUNICIPAL SOLID WASTE LANDFILL	1AE & 4AE
TARRANT	218C	CITY OF FORT WORTH SE LANDFILL	1
TERRY	2170	CITY OF BROWNFIELD LANDFILL	1
TERRY	2293	CITY OF MEADOW LANDFILL	1AE & 4AE
TITUS	797B	PLEASANT OAKS LANDFILL	1
TOM GREEN	79	CITY OF SAN ANGELO LANDFILL	1
UVALDE	1725	CITY OF UVALDE LANDFILL	1
VICTORIA	1522A	CITY OF VICTORIA LANDFILL	1
WARD	772	CITY OF MONAHANS LANDFILL	1AE & 4AE
WEBB	2286	PONDEROSA REGIONAL LANDFILL	1
WHEELER	2281A	CITY OF SHAMROCK MUNICIPAL LANDFILL	1AE
WICHITA	1428A	CITY OF WICHITA FALLS LANDFILL	1
WICHITA	1571A	BUFFALO CREEK LANDFILL	1
YOAKUM	2217	YOAKUM COUNTY LANDFILL	1AE & 4AE
ZAPATA	783A	ZAPATA COUNTY LANDFILL	1AE & 4AE
ZAVALA	1308A	CITY OF CRYSTAL CITY LANDFILL	1AE
ZAVALA	2303	ZAVALA COUNTY MSWF LANDFILL	1AE

Table C.3.2 below lists known Texas MSW landfills that are authorized but not receiving waste as of June 2020.

Table C.3.2: Closed MSW Landfills in Texas

TCEQ RN	MSW Permit#	Landfill Site Name	Physical Type	Legal Status Date	Physical Site Status	County	Near City
RN100627504	1056	SMOTHERMAN AND SHARP LANDFILL	1	10/26/1978	CLOSED	POTTER	AMARILLO
RN102001146	1609	CITY OF MEMPHIS LANDFILL	1AE	01/20/1984	POST CLOSURE	HALL	MEMPHIS
RN102212743	405A	CITY OF CANYON LANDFILL	1	09/12/1986	POST CLOSURE	RANDALL	CANYON
RN101844942	989	CITY OF CHILDRESS LANDFILL	1	10/12/1976	CLOSED	CHILDRESS	CHILDRESS
RN101691202	252	CITY OF PLAINVIEW LANDFILL	1	03/31/1975	CLOSED	HALE	PLAINVIEW
RN102334489	380	CITY OF BROWNFIELD LANDFILL	1	10/13/1976	CLOSED	TERRY	BROWNFIELD
RN101478873	539	LUBBOCK COUNTY IDALOU LANDFILL	1	01/25/1996	CLOSED	LUBBOCK	IDALOU
RN102335841	1087	CITY OF GRAHAM LANDFILL	1	05/03/1977	CLOSED	YOUNG	GRAHAM
RN104748876	1242	CITY OF GRAHAM LANDFILL	1	10/06/1994	CLOSED	YOUNG	GRAHAM
RN102335866	1343A	CITY OF BURKBURNETT LANDFILL	1	07/26/1995	POST CLOSURE	WICHITA	BURKBURNETT
RN102214772	192	CITY OF NOCONA LANDFILL	1	12/23/1974	CLOSED	MONTAGUE	NOCONA
RN102071974	365	CITY OF ABILENE LANDFILL	1	01/17/1979	CLOSED	TAYLOR	ABILENE
RN102820669	416	CITY OF COLEMAN LANDFILL	1	03/26/1975	CLOSED	COLEMAN	COLEMAN
RN100633346	825	BUFFALO GAP TUSCOLA CITY LANDFILL	1	04/22/1976	CLOSED	TAYLOR	BUFFALO GAP
RN102118585	950	CITY OF VERNON LANDFILL	1	01/14/1977	CLOSED	WILBARGER	VERNON
RN101991925	1019A	WESTSIDE RECYCLING AND DISPOSAL FACILITY	1	05/29/1998	POST CLOSURE	TARRANT	ALEDO
RN100632736	1024	CABANISS BROTHERS SOUTHARD LANDFILL	1	12/22/1976	CLOSED	ELLIS	AVALON
RN101479335	1050	LANCASTER DON R LANDFILL	1	12/08/1993	CLOSED	PARKER	WEATHERFORD
RN100221225	1062A	CASTLE LANDFILL	1	08/26/1987	POST CLOSURE	DALLAS	GARLAND
RN101478063	1232	TARRANT COUNTY SANITATION LANDFILL	1	11/27/1978	CLOSED	TARRANT	FORT WORTH
RN103049607	1236A	HUTCHINS LANDFILL	1	06/03/1996	POST CLOSURE	DALLAS	HUTCHINS
RN102216322	1261	CITY OF DUNCANVILLE LANDFILL	1	09/02/1994	CLOSED	ELLIS	MIDLOTHIAN
RN101477925	1450	MORROW AND SONS LANDFILL	1	03/12/1981	CLOSED	PARKER	RENO
RN102091998	1467	CITY OF CORSICANA LANDFILL	1	09/08/1994	CLOSED	NAVARRO	CORSICANA
RN101477834	1499	REESE CLYDE & REESE JOE E LANDFILL	1	12/01/1981	CLOSED	TARRANT	GARDEN ACRES
RN100214246	208A	MILL CREEK LANDFILL	1	09/22/1995	POST CLOSURE	TARRANT	FORT WORTH
RN102211927	219	CITY OF FORT WORTH NE LANDFILL	1	02/07/1975	POST CLOSURE	TARRANT	FORT WORTH

TCEQ RN	MSW Permit#	Landfill Site Name	Physical Type	Legal Status Date	Physical Site Status	County	Near City
RN102001922	221	CITY OF FRISCO LANDFILL	1	02/06/1975	CLOSED	COLLIN	FRISCO
RN102216603	238	CITY OF ENNIS LANDFILL	1	03/30/1976	CLOSED	ELLIS	ENNIS
RN102000924	264	CITY OF IRVING LANDFILL	1	04/12/1976	CLOSED	DALLAS	IRVING
RN102143138	302	CITY OF GAINESVILLE LANDFILL	1	03/06/1997	POST CLOSURE	COOKE	GAINESVILLE
RN102289238	313	CITY OF KLEBERG LANDFILL	1	03/28/1975	CLOSED	DALLAS	KLEBERG
RN102091998	425	CITY OF CORSICANA LANDFILL	1	11/08/1977	CLOSED	NAVARRO	CORSICANA
RN100733773	44A	NORTH TEXAS MUNICIPAL WATER DISTRICT LANDFILL	1	11/01/1985	POST CLOSURE	COLLIN	WYLIE
RN102668936	45	CITY OF RICHARDSON LANDFILL	1	09/02/1983	CLOSED	COLLIN	RICHARDSON
RN102335775	46	CITY OF RICHARDSON LANFILL	1	11/25/1981	CLOSED	COLLIN	RICHARDSON
RN102668100	464A	LAIDLAW FORT WORTH LANDFILL	1	09/23/1988	POST CLOSURE	TARRANT	FORT WORTH
RN102217452	473	CITY OF GREENVILLE LANDFILL	1	06/29/1994	CLOSED	HUNT	GREENVILLE
RN100217942	556	TRINITY OAKS LANDFILL	1	04/15/1977	POST CLOSURE	DALLAS	DALLAS
RN102289980	568A	NORTH TEXAS MUNICPAL WATER DISTRICT LANDFILL	1	08/25/1993	POST CLOSURE	COLLIN	MCKINNEY
RN102217577	61	CITY OF DALLAS LANDFILL	1	08/29/1975	CLOSED	DALLAS	DALLAS
RN102142890	63	CITY OF DALLAS LANDFILL	1	01/28/1975	CLOSED	DALLAS	DALLAS
RN100629724	644	SAVAGE RUSSELL H LANDFILL	1	05/02/1975	CLOSED	DENTON	DENTON
RN102211935	648	GREATER TEXOMA UTILITY AUTHORITY LANDFILL	1	09/26/1977	POST CLOSURE	GRAYSON	DENISON
RN101665743	88	SOUTH LOOP 12 LANDFILL	1	04/01/1975	CLOSED	DALLAS	DALLAS
RN102119716	124	CITY OF MARSHALL	1	10/21/1992	CLOSED	HARRISON	MARSHALL
RN102143005	133	CITY OF PALESTINE LANDFILL	1	07/18/1985	CLOSED	ANDERSON	PALESTINE
RN102142825	144	CITY OF PARIS LANDFILL	1	04/19/1976	POST CLOSURE	LAMAR	PARIS
RN102327921	179	CITY OF KILGORE LANDFILL	1	03/17/1997	CLOSED	GREGG	KILGORE
RN102926151	209	CITY OF SULPHUR SPRINGS LANDFILL	1	01/09/1975	CLOSED	HOPKINS	SULPHUR SPRINGS
RN102119310	263	CITY OF ATHENS LANDFILL	1	04/01/1975	CLOSED	HENDERSON	ATHENS
RN101477305	497	SAM W HUGHES SR LANDFILL	1	04/01/1975	CLOSED	BOWIE	TEXARKANA
RN102003621	650	CITY OF DEKALB LANDFILL	1	08/31/1995	POST CLOSURE	BOWIE	DE KALB
RN101491819	711	WOOD COUNTY PRECINCT 4 LANDFILL	1	07/07/1976	CLOSED	WOOD	WINNSBORO
RN102668902	841	ANDERSON COUNTY LANDFILL	1	11/15/1988	CLOSED	ANDERSON	PALESTINE
RN100210848	1482	CLINT LANDFILL	1	02/03/1983	POST CLOSURE	EL PASO	CLINT
RN101477107	1521	JOHNSON RANCH LANDFILL	1	12/27/1982	POST CLOSURE	ECTOR	ODESSA
RN102166832	1270	BARNHART LANDFILL	1AE	08/06/1979	POST CLOSURE	IRION	BARNHART

TCEQ RN	MSW Permit#	Landfill Site Name	Physical Type	Legal Status Date	Physical Site Status	County	Near City
RN100530146	1325A	STERLING COUNTY LANDFILL	4AE	03/10/1983	CLOSED	STERLING	STERLING CITY
RN102143658	614	CITY OF ROBERT LEE LANDFILL	4AE	08/17/1976	POST CLOSURE	COKE	ROBERT LEE
RN103053278	1003	CITY OF COPPERAS COVE LANDFILL	1	04/01/1997	POST CLOSURE	CORYELL	COPPERAS COVE
RN106117625	1039	CITY OF WACO LANDFILL	1	07/22/1977	POST CLOSURE	MCLENNAN	WACO
RN101477909	1283	US ARMY FORT HOOD LANDFILL	1	12/07/2000	CLOSED	CORYELL	FORT HOOD
RN102835733	1419	CITY OF WACO LANDFILL	1	09/03/1981	POST CLOSURE	MCLENNAN	WACO
RN100830090	1444C	ROCK PRAIRIE ROAD LANDFILL	1	11/25/2002	POST CLOSURE	BRAZOS	COLLEGE STATION
RN102002011	181	CITY OF MARLIN LANDFILL	1	02/23/1995	CLOSED	FALLS	MARLIN
RN102290079	513	CITY OF KILLEEN LANDFILL	1	02/20/1997	CLOSED	BELL	KILLEEN
RN102777968	1390	SB WINGFIELD LANDFILL	1	05/02/1980	CLOSED	TRAVIS	AUSTIN
RN100542752	1447A	SUNSET FARMS LANDFILL	1	11/05/2009	POST CLOSURE	TRAVIS	AUSTIN
RN101477636	247A	LEE COUNTY LANDFILL	1	08/03/1990	CLOSED	LEE	GIDDINGS
RN102329901	360A	CITY OF AUSTIN LANDFILL	1	12/21/1983	CLOSED	TRAVIS	AUSTIN
RN101921443	452	CITY OF ELGIN LANDFILL	1	08/29/2001	CLOSED	BASTROP	ELGIN
RN100629211	684	TRAVIS COUNTY LANDFILL	1	10/10/1977	POST CLOSURE	TRAVIS	AUSTIN
RN101719706	685	TRAVIS COUNTY PRECINCT 2 LANDFILL	1	03/25/1975	CLOSED	TRAVIS	AUSTIN
RN100629930	1043	MATAGORDA COUNTY PRECINCT 4 LANDFILL	1	06/15/1907	CLOSED	MATAGORDA	BAY CITY
RN102668639	1048	FORT BEND COUNTY LANDFILL	1	08/04/1977	POST CLOSURE	FORT BEND	ROSENBERG
RN102120755	1140A	CITY OF TOMBALL LANDFILL	1	12/20/1984	POST CLOSURE	HARRIS	TOMBALL
RN101664233	1238	CITY OF BELLAIRE LANDFILL	1	01/31/1995	CLOSED	HARRIS	HOUSTON
RN100891969	1279	BLUEBONNET LANDFILL	1	03/18/1991	POST CLOSURE	HARRIS	HOUSTON
RN102327467	1435	CITY OF PALACIOS LANDFILL	1	01/25/1994	CLOSED	MATAGORDA	PALACIOS
RN102327699	1554A	FORT BEND COUNTY LANDFILL	1	05/31/1990	POST CLOSURE	FORT BEND	ROSENBERG
RN102119773	196	CITY OF HUNTSVILLE LANDFILL	1	11/16/1976	CLOSED	WALKER	HUNTSVILLE
RN102289881	355	CITY OF ALVIN LANDFILL	1	03/08/1995	CLOSED	BRAZORIA	ALVIN
RN102289998	624	CITY OF ROSENBERG LANDFILL	1	03/24/1975	CLOSED	FORT BEND	ROSENBERG
RN100225994	81A	WESTERN WASTE OF TEXAS LLC	1	11/08/1985	POST CLOSURE	MONTGOMERY	CONROE
RN102143583	855	CITY OF WHARTON LANDFILL	1	03/15/1979	POST CLOSURE	WHARTON	WHARTON
RN101478139	1020	MEDINA COUNTY DEVINE LANDFILL	1	08/08/1997	CLOSED	MEDINA	DEVINE
RN101669455	123	KARNES COUNTY LANDFILL	1	01/10/1992	CLOSED	KARNES	KENEDY
RN101478238	1237	NELSON GARDENS LANDFILL	1	11/15/1982	POST CLOSURE	BEXAR	SAN ANTONIO
RN101999266	185	CITY OF HONDO LANDFILL	1	03/17/1997	CLOSED	MEDINA	HONDO

TCEQ RN	MSW Permit#	Landfill Site Name	Physical Type	Legal Status Date	Physical Site Status	County	Near City
RN102001187	312	CITY OF KARNES CITY LANDFILL	1	03/18/1975	CLOSED	KARNES	KARNES CITY
RN102211844	40	CITY OF FREDERICKSBURG LANDFILL	1	02/23/1995	CLOSED	GILLESPIE	FREDERICKSBURG
RN101479301	418	COLISEUM ADVISORY BOARD LANDFILL	1	03/26/1975	CLOSED	BEXAR	SAN ANTONIO
RN102001534	474	GUTIERREZ DISPOSAL LANDFILL	1	04/01/1975	CLOSED	GUADALUPE	SCHERTZ
RN106473887	577	CITY OF NEW BRAUNFELS LANDFILL	1	08/19/1997	POST CLOSURE	COMAL	
RN102213691	593	CITY OF PEARSALL LANDFILL	1	06/03/1994	CLOSED	FRIO	PEARSALL
RN102071537	633	PEARSALL ROAD LANDFILL	1	06/27/1980	POST CLOSURE	BEXAR	SAN ANTONIO
RN102120284	824	CITY OF SAN ANTONIO LANDFILL	1	04/21/1976	CLOSED	WILSON	FLORESVILLE
RN101667715	951	CITY OF SAN ANTONIO RIGSBY AVENUE LANDFILL	1	11/03/1976	POST CLOSURE	BEXAR	SAN ANTONIO
RN102000692	120	CITY OF VICTORIA LANDFILL	1	07/15/1985	CLOSED	VICTORIA	VICTORIA
RN102214160	184	CITY OF TAFT LANDFILL	1	09/18/1991	CLOSED	SAN PATRICIO	TAFT
RN102072519	242A	SINTON LANDFILL	1	05/20/1977	POST CLOSURE	SAN PATRICIO	SINTON
RN100224724	423B	CITY OF CORPUS CHRISTI LANDFILL	1	05/23/2008	POST CLOSURE	NUECES	CORPUS CHRISTI
RN102503646	597	CITY OF PORT ARANSAS LANDFILL	1	03/20/1975	CLOSED	NUECES	PORT ARANSAS
RN100542364	151A	C & T LANDFILL	1	05/16/2000	POST CLOSURE	HIDALGO	LINN
RN102120763	1593A	HIDALGO COUNTY LANDFILL	1	01/21/1992	POST CLOSURE	HIDALGO	EDINBURG
RN102328382	1661	CITY OF WESLACO LANDFILL	1	12/06/1983	CLOSED	HIDALGO	WESLACO
RN102118973	170	CITY OF ALAMO LANDFILL	1	04/08/1994	CLOSED	HIDALGO	ALAMO
RN102778230	1948A	RIO GRANDE VALLEY LANDFILL	1	01/10/2002	POST CLOSURE	HIDALGO	DONNA
RN102335767	2131	CITY OF HARLINGEN LANDFILL	1	07/30/1993	POST CLOSURE	CAMERON	HARLINGEN
RN102211612	224	CITY OF MCALLEN LANDFILL	1	01/25/1996	POST CLOSURE	HIDALGO	MC ALLEN
RN102143245	243	CITY OF EDINBURG LANDFILL	1	03/20/1975	CLOSED	HIDALGO	EDINBURG
RN102118841	258	CITY OF WESLACO LANDFILL	1	06/10/1976	POST CLOSURE	HIDALGO	MISSION
RN102004058	490	CITY OF HIDALGO LANDFILL	1	03/13/1980	CLOSED	HIDALGO	HIDALGO
RN101478956	598	CITY OF PORT ISABEL LANDFILL	1	10/31/1996	CLOSED	CAMERON	PORT ISABEL
RN102668779	663	STARR COUNTY LANDFILL	1	03/24/1975	POST CLOSURE	STARR	RIO GRANDE CITY
RN102335585	761	CITY OF SAN BENITO LANDFILL	1	04/02/1975	CLOSED	CAMERON	SAN BENITO
RN102334513	1528	ZAPATA COUNTY LANDFILL	4AE	03/21/1983	POST CLOSURE	ZAPATA	ZAPATA
RN101999597	430	CITY OF CRYSTAL CITY LANDFILL	1	03/03/1995	CLOSED	ZAVALA	CRYSTAL CITY
RN102212628	721	CITY OF EAGLE PASS LANDFILL	1	04/01/1991	CLOSED	MAVERICK	EAGLE PASS

II. Emissions Inventory

Table C.3.3 below shows non-methane organic compound (NMOC) emissions from landfills in Texas. This data was obtained from the 2019 emission inventory prepared by the U.S. Environmental Protection Agency for the 40 CFR Part 62, Subpart OOO federal plan.

Table C.3.3: Annual NMOC Emissions from MSW Landfills in Texas

LANDFILL ID (EPA)	LANDFILL_NAME	COUNTY	CITY	GENERATED NMOC (Mg/YR) - AP-42	COLLECTED NMOC (Mg/YR)	REMAINING EMITTED NMOC (Mg/YR)
528101	ANGELINA COUNTY WASTE MANAGEMENT CENTER	ANGELINA	LUFKIN	30.32	24.76	5.56
1466	BELL COUNTY/SPARKS LF	BELL	HOLLAND	2.36		2.36
525023	TEMPLE RECYCLING AND DISPOSAL FACILITY	BELL	TEMPLE	90.33	66.81	23.52
523388	TESSMAN ROAD LANDFILL	BEXAR	SAN ANTONIO	295.77	227.59	68.18
525040	COVEL GARDENS RECYCLING AND DISPOSAL FACILITY	BEXAR	SAN ANTONIO	330.34	267.48	62.87
555737	NELSON GARDENS LANDFILL	BEXAR	SAN ANTONIO	57.89	48.22	9.67
524829	SEABREEZE ENVIRONMENTAL LANDFILL	BRAZORIA	ANGLETON	224.21	179.97	44.24
524245	ROCK PRAIRIE ROAD LANDFILL	BRAZOS	COLLEGE STATION	40.36	33.62	6.74
1914	CITY OF BROWNWOOD LANDFILL	BROWN	BROWNWOOD	19.32		19.32
527559	BROWNSVILLE MUNICIPAL LANDFILL	CAMERON	BROWNSVILLE	69.31	49.61	19.69
525051	BAYTOWN LANDFILL	CHAMBERS	BAYTOWN	87.66	72.42	15.25
523330	ROYAL OAKS LANDFILL	CHEROKEE	JACKSONVILLE	26.03		26.03
1458	CITY OF RICHARDSON LF	COLLIN	RICHARDSON	3.16		3.16
528632	MCKINNEY LANDFILL	COLLIN	MCKINNEY	34.15		34.15

LANDFILL ID (EPA)	LANDFILL_NAME	COUNTY	CITY	GENERATED NMOC (Mg/YR) - AP-42	COLLECTED NMOC (Mg/YR)	REMAINING EMITTED NMOC (Mg/YR)
528633	121 REGIONAL DISPOSAL FACILITY	COLLIN	MELISSA	160.47	133.66	26.81
528643	MAXWELL CREEK LANDFILL	COLLIN	WYLIE	27.83		27.83
1518	TRICIL ENVIRONMENTAL RESPONSE/ALTAR SLF	COLORADO	ALTAIR	10.39		10.39
536197	ALTAIR DISPOSAL SERVICES, LLC	COLORADO	ALTAIR	13.94		13.94
525028	MESQUITE CREEK LANDFILL	COMAL	NEW BRAUNFELS	94.94	77.75	17.19
524262	FORT HOOD	CORYELL	FORT HOOD	9.69		9.69
1510	LAIDLAW/WILMER LF	DALLAS	WILMER	4.55		4.55
523585	CITY OF GRAND PRAIRIE LANDFILL	DALLAS	GRAND PRAIRIE	42.53	33.53	9.00
526582	CHARLES M HINTON JR REGIONAL LANDFILL	DALLAS	ROWLETT	72.12	56.79	15.33
526584	CITY OF GARLAND CASTLE DRIVE LANDFILL	DALLAS	GARLAND	29.79		29.79
526900	HUTCHINS LANDFILL	DALLAS	HUTCHINS	9.27		9.27
526903	TRINITY OAKS LANDFILL	DALLAS	DALLAS	31.21		31.21
530040	CITY OF IRVING/ HUNTER FERRELL LANDFILL	DALLAS	IRVING	38.75	30.85	7.89
532397	MCCOMMAS BLUFF LANDFILL	DALLAS	DALLAS	386.77	322.15	64.62
524267	CITY OF DENTON LANDFILL	DENTON	DENTON	35.50	29.57	5.93
525137	DFW RECYCLING AND DISPOSAL FACILITY	DENTON	LEWISVILLE	460.26	383.36	76.90
523326	CHARTER WASTE LANDFILL	ECTOR	ODESSA	42.93	34.57	8.36
528078	CLINT LANDFILL	EL PASO	EL PASO	59.95	48.18	11.77
528081	MCCOMBS LANDFILL	EL PASO	EL PASO	19.17		19.17
523360	CSC DISPOSAL AND LANDFILL	ELLIS	AVALON	39.64	33.02	6.62

LANDFILL ID (EPA)	LANDFILL_NAME	COUNTY	CITY	GENERATED NMOC (Mg/YR) - AP-42	COLLECTED NMOC (Mg/YR)	REMAINING EMITTED NMOC (Mg/YR)
523384	ECD LANDFILL	ELLIS	ENNIS	48.82	40.04	8.78
1948	FORT BEND COUNTY LANDFILL	FORT BEND	ROSENBERG	13.39		13.39
522790	FORT BEND REGIONAL LANDFILL	FORT BEND	NEEDVILLE	105.05	78.09	26.96
523368	BLUE RIDGE LANDFILL	FORT BEND	FRESNO	158.80	132.27	26.53
525059	COASTAL PLAINS RECYCLING AND DISPOSAL FACILITY	GALVESTON	ALVIN	153.94	128.22	25.72
524188	CITY OF PAMPA LANDFILL	GRAY	PAMPA	7.36		7.36
523901	TEXOMA AREA SOLID WASTE AUTHORITY LANDFI	GRAYSON	WHITESBORO	18.65		18.65
525142	HILLSIDE LANDFILL	GRAYSON	SHERMAN	49.35	34.84	14.50
523332	PINEHILL LANDFILL	GREGG	KILGORE	96.06	79.65	16.41
524505	IESI HARDIN COUNTY LANDFILL	HARDIN	KOUNTZE	11.69		11.69
523334	WHISPERING PINES LANDFILL	HARRIS	HOUSTON	87.28	67.58	19.69
523357	MCCARTY ROAD LANDFILL TX	HARRIS	HOUSTON	712.70	578.87	133.83
525053	ATASCOCITA RECYCLING AND DISPOSAL FACILITY	HARRIS	HUMBLE	300.45	247.17	53.28
525583	BLUEBONNET LANDFILL	HARRIS	HOUSTON	12.57		12.57
523392	RIO GRANDE VALLEY LANDFILL	HIDALGO	DONNA	51.14	42.60	8.54
524287	CITY OF EDINBURG LANDFILL	HIDALGO	EDINBURG	50.95	42.43	8.51
526891	C & T REGIONAL LANDFILL	HIDALGO	LINN	17.56		17.56
523373	ITASCA LANDFILL	HILL	ITASCA	98.52	79.29	19.23
523359	MALOY SOLID WASTE LANDFILL	HUNT	CAMPBELL	34.24	28.48	5.76
525144	WASTE MANAGEMENT PECAN PRAIRIE	HUNT	CELESTE	7.85		7.85

LANDFILL ID (EPA)	LANDFILL_NAME	COUNTY	CITY	GENERATED NMOC (Mg/YR) - AP-42	COLLECTED NMOC (Mg/YR)	REMAINING EMITTED NMOC (Mg/YR)
523201	CITY OF BEAUMONT LANDFILL	JEFFERSON	BEAUMONT	69.10	55.92	13.18
523317	CITY OF PORT ARTHUR LANDFILL	JEFFERSON	BEAUMONT	41.46	30.43	11.03
523395	GOLDEN TRIANGLE LANDFILL	JEFFERSON	BEAUMONT	88.83	73.81	15.03
526374	IESI TURKEY CREEK LANDFILL	JOHNSON	ALVARADO	84.32	60.72	23.60
523371	ABILENE REGIONAL LANDFILL	JONES	ABILENE	62.82	51.35	11.47
523391	KERRVILLE LANDFILL	KERR	KERRVILLE	7.75		7.75
525143	PARIS LANDFILL	LAMAR	POWDERLY	28.72	23.92	4.80
557717	BLOSSOM PRAIRIE LANDFILL	LAMAR	BLOSSOM	22.41		22.41
525065	SECURITY RECYCLING AND DISPOSAL FACILITY	LIBERTY	CLEVELAND	106.63	87.08	19.55
523385	MEXIA LANDFILL	LIMESTONE	MEXIA	10.39		10.39
1474	QUAIL CANYON	LUBBOCK	LUBBOCK	0.81		0.81
528430	WEST TEXAS REGION DISPOSAL FACILITY	LUBBOCK	ABERNATHY	37.31		37.31
528433	CALICHE CANYON LANDFILL	LUBBOCK	LUBBOCK	25.74		25.74
523319	CITY OF WACO LANDFILL	MCLENNAN	WACO	66.53	54.03	12.50
525021	LACY LAKEVIEW RDF	MCLENNAN	WACO	31.61	26.33	5.28
523652	CITY OF MIDLAND MSW LANDFILL	MIDLAND	MIDLAND	31.23		31.23
1815	COLORADO CITY LANDFILL	MITCHELL	COLORADO CITY	12.46		12.46
525085	CONROE 6 LANDFILL	MONTGOMERY	CONROE	16.11		16.11
523293	CITY OF NACOGDOCHES LANDFILL	NACOGDOCHES	NACOGDOCHES	19.31		19.31
523460	CITY OF CORSICANA LANDFILL	NAVARRO	CORSICANA	29.80	24.28	5.52

LANDFILL ID (EPA)	LANDFILL_NAME	COUNTY	CITY	GENERATED NMOC (Mg/YR) - AP-42	COLLECTED NMOC (Mg/YR)	REMAINING EMITTED NMOC (Mg/YR)
524834	NEWTON COUNTY LANDFILL	NEWTON	DEWEYVILLE	56.09	43.95	12.15
1826	CITY OF SWEETWATER LF	NOLAN	SWEETWATER	10.57		10.57
523257	J. C. ELLIOTT LANDFILL AND TRANSFER STATION	NUECES	CORPUS CHRISTI	53.76	44.78	8.98
523261	CEFE VALENZUELA LANDFILL	NUECES	BISHOP	82.74	68.91	13.82
523390	EL CENTRO LANDFILL	NUECES	ROBSTOWN	44.59	33.12	11.47
1824	CITY OF PERRYTON LANDFILL	OCHILTREE	PERRYTON	7.63		7.63
10760	ORANGE COUNTY LF	ORANGE	ORANGE	6.21		6.21
525447	WESTSIDE RECYCLING AND DISPOSAL FACILITY	PARKER	ALEDO	78.97	65.77	13.19
526349	IESI WEATHERFORD LANDFILL	PARKER	WEATHERFORD	53.88	44.88	9.00
524506	POLK COUNTY LANDFILL	POLK	LEGGETT	22.77		22.77
528745	CITY OF AMARILLO LANDFILL	POTTER	AMARILLO	66.77	50.87	15.90
523374	SOUTHWEST LANDFILL	RANDALL	CANYON	40.29	33.56	6.73
524509	IESI EAST TEXAS REGIONAL LANDFILL	RUSK	HENDERSON	23.61		23.61
526902	SINTON LANDFILL	SAN PATRICIO	SINTON	8.87		8.87
524162	CITY OF SNYDER LANDFILL	SCURRY	SNYDER	6.37		6.37
523333	GREENWOOD FARMS LANDFILL	SMITH	TYLER	99.32	78.96	20.36
523362	ARLINGTON LANDFILL	TARRANT	EULESS	152.77	127.25	25.52
523372	CITY OF FORT WORTH SOUTHEAST LANDFILL	TARRANT	KENNEDALE	119.03	92.45	26.58
525585	EASTSIDE/TEXAS	TARRANT	FORT WORTH	10.12		10.12
526892	FORT WORTH REGIONAL LANDFILL	TARRANT	FORT WORTH	22.69		22.69
526901	MILL CREEK LANDILL	TARRANT	FORT WORTH	16.47		16.47
1513	BFI LF	TAYLOR	ABILENE	4.73		4.73

LANDFILL ID (EPA)	LANDFILL_NAME	COUNTY	CITY	GENERATED NMOC (Mg/YR) - AP-42	COLLECTED NMOC (Mg/YR)	REMAINING EMITTED NMOC (Mg/YR)
523331	PLEASANT OAKS LANDFILL	TITUS	MT PLEASANT	21.71		21.71
524160	SAN ANGELO LANDFILL	TOM GREEN	SAN ANGELO	28.46		28.46
523187	FM 812 LANDFILL	TRAVIS	AUSTIN	21.25		21.25
523394	SUNSET FARMS LANDFILL	TRAVIS	AUSTIN	231.96	193.20	38.75
525032	WASTE MANAGEMENT OF TEXAS AUSTIN COMMUNITY RECYCLING & DISPOSAL FACILITY	TRAVIS	AUSTIN	156.21	127.26	28.94
527784	TEXAS DISPOSAL SYSTEMS LANDFILL	TRAVIS	BUDA	149.48	118.35	31.13
523370	CITY OF VICTORIA LANDFILL	VICTORIA	BLOOMINGTON	59.04	45.06	13.98
1481	BELL PROCESSING INC. LF	WICHITA	WICHITA FALLS	8.04		8.04
524000	CITY OF WICHITA FALLS LANDFILL	WICHITA	WICHITA FALLS	37.95	31.61	6.34
524515	IESI BUFFALO CREEK LANDFILL	WICHITA	IOWA PARK	39.72	30.36	9.36
525035	WILLIAMSON COUNTY LANDFILL HUTTO	WILLIAMSON	HUTTO	87.08	63.51	23.57

APPENDIX C.4

Derivation Table for Proposed Chapter 113 Rules

Table C.4.1: Derivation Table for Correlating Proposed Chapter 113, Subchapter D, Division 6 Rules to Corresponding Federal Rules

TCEQ Ch.113 Division 6 Citation	40 CFR 60/62 Citation
113.2400(a)	60.31f(a)
113.2400(b)	60.31f(b)
113.2400(c) & (d)	No equivalent CFR section. State-only provisions for clarifying applicability.
113.2402(a)	60.2, 60.41f
113.2402(b)	State-only provision; preserves EPA Administrator authority for §60.35f(a)(5).
113.2402(c)	62.16730 (definition of legacy controlled landfill, modified slightly for state purposes)
113.2404(a)(1)	60.31f
113.2404(a)(2)	60.32f
113.2404(a)(3)	60.33f
113.2404(a)(4)	60.34f
113.2404(a)(5)	60.35f
113.2404(a)(6)	60.36f
113.2404(a)(7)	60.37f
113.2404(a)(8)	60.38f
113.2404(a)(9)	60.39f
113.2404(a)(10)	60.40f
113.2404(b)	No equivalent CFR section. State-only provision.[1]
113.2404(c)	62.16714(c)(2)(iii)
113.2404(d)	62.16714(b)(1)
113.2406(a)	No equivalent CFR section. State-only provision.[2]
113.2406(b)	Requirements correspond to 60.24(f) and 60.24a(e).
113.2406(c)	No equivalent CFR section. State-only provision.
113.2408	60.31f(c) and (d)
113.2410(a)(1)	60.38f(a), 62.16724
113.2410(a)(2)	60.38f(c), 62.16724
113.2410(a)(3)	60.38f(d) and (e), 62.16724
113.2410(a)(4)	State reporting provision (supports 60.25 inventory & progress report requirements)
113.2410(a)(5)	60.38f

[1] This state-only provision allows the use of the control requirements of 30 TAC Chapter 115, §115.152 in lieu of certain requirements of 40 CFR §60.33f. This provision is carried over, with minor revisions, from Texas' 1998 State Plan for MSW Landfills. Refer to Appendix E for a detailed explanation of this provision.

[2] This state-only provision exempts MSW landfills which have not accepted waste since October 9, 1993, and which have no additional design capacity available for future waste deposition. This provision is carried over from Texas' 1998 State Plan. Refer to Appendix E for a detailed explanation of this provision.

TCEQ Ch.113 Division 6 Citation	40 CFR 60/62 Citation
113.2410(b)	62.16711(h) (text modified slightly to refer to corresponding reporting provisions of Subpart Cf)
113.2410(c)	62.16724(h)
113.2410(d)	62.16724(d)(7)
113.2412(a)	State-only provision which establishes when affected facilities must comply with the requirements of Division 6.
113.2412(b)	40 CFR 62 Subpart OOO, Table 1

APPENDIX C.5

Evaluation of Modified Applicability and Collection and Control System Requirements

Appendix C.5: Evaluation of Modified Applicability and Collection and Control System Requirements.

I. Background

The proposed revisions to the Texas §111(d) state plan for MSW landfills, and the corresponding proposed revisions to Chapter 113, include two features which differ from the corresponding requirements in 40 CFR 60 Subpart Cf and 40 CFR 62 Subpart OOO. These two features are not new, as they are part of Texas' approved 1998 state plan for MSW landfills and a part of the existing Chapter 113, Subchapter D, Division 1 rules which implement that state plan. TCEQ is proposing to carry over these previously approved features into the proposed revised state plan to implement the 2016 emission guidelines (EG) for MSW landfills. Although these elements of the state plan were previously approved for purposes of implementing the 1996 EG, a discussion of these features is warranted to demonstrate that retaining these features is still appropriate for purposes of the 2016 EG.

The two differences relate to: 1) an alternate date range for determining which MSW landfills are subject to the proposed revisions to the state plan and proposed Chapter 113, Subchapter D, Division 6 rules; and 2) an option which allows owners or operators of MSW landfills to comply with the collection system and control device requirements of 30 TAC §115.152 in lieu of certain corresponding requirements in 40 CFR 60 Subpart Cf. These differences are addressed in detail below in Sections II and III.

II. Alternate date range for determining applicability of proposed requirements.

Proposed 30 TAC §113.2406(a) would exempt certain MSW landfills from the requirements of proposed Chapter 113, Subchapter D, Division 6. This proposed exemption is carried over from TCEQ's existing Division 1 landfill rules (30 TAC §113.2060(2)(A)) and the previously approved state plan, but has been rephrased as an explicit exemption rather than as a part of the definition of existing MSW landfill. The proposed rule exempts MSW landfills that have not accepted waste since October 9, 1993, and do not have additional design capacity available for future waste deposition. This proposed exemption modifies the applicability of the rules relative to the default federal requirements of 40 CFR 60 Subparts Cc and Cf, because it excludes MSW landfills that stopped accepting waste between November 8, 1987 (the date specified in Subparts Cc and Cf) and October 9, 1993.

This proposed exemption is in accordance with the criteria of 40 CFR §60.24(f), which allow a state rule to be less stringent for a particular designated class of facilities provided the state can show that factors exist which make application of a less stringent standard significantly more reasonable. When TCEQ adopted the Chapter 113, Subchapter D, Division 1 rules for existing MSW landfills in 1998, the commission's analysis found that only one landfill (City of Killeen) which closed within the relevant time period had an estimated emission rate of non-methane organic compounds (NMOC) above the control threshold of 50 Mg/yr, and that the Killeen landfill's emissions were projected to fall below the 50 Mg/yr control threshold by 2004. The commission also estimated that, using an alternate calculation method, the

emissions from the landfill would be even lower, and would be "borderline" relative to the 50 Mg/yr threshold. The commission further determined that the cost of installing an operating a gas collection and control system for the landfill would be unreasonable based on the short period of time the facility was projected to be above the 50 Mg/yr threshold. (See 23 TexReg 10876, October 23, 1999, in Attachment 1 to Appendix C.5.) In EPA's approval of the TCEQ's original state plan submittal, the EPA acknowledged that no designated landfills which closed between November 8, 1987, and October 9, 1993, would have estimated NMOC emissions above the 50 megagram (Mg) control threshold, and that controlling these closed landfills would not result in a significant reduction in NMOC emissions relative to the cost to install gas collection systems. (See 64 FR 32428, in Attachment 1 to Appendix C.5.) As many years have passed since the original Texas state plan was approved in 1999, none of the landfills which stopped accepting waste during the relevant 1987-1993 time period would have current NMOC emissions above the 50 Mg/year threshold. The commission is including a copy of the prior state plan analysis in Attachment 1 in support of maintaining this existing exemption.

III. Option to comply with 30 TAC §115.152 in lieu of certain Subpart Cf requirements.

Under proposed 30 TAC §113.2404(b), landfill gas collection and control systems approved by the commission and installed in compliance with 30 TAC §115.152 are deemed to satisfy certain technical requirements of the emission guidelines (specifically, 40 CFR §60.33f(b) and (c)). Proposed subsection (b) is intended to reduce potentially duplicative and redundant requirements for landfill gas collection and control systems which are subject to both Chapter 115 requirements and the emission guidelines. The gas collection and control system requirements in 30 TAC §115.152 are based on the requirements in the proposed version of the original landfill NSPS under 40 CFR 60 Subpart WWW (56 FR 24468, May 30, 1991). Proposed subsection (b) is essentially carried over from existing 30 TAC §113.2061(b), but the text of the proposed rule has been rephrased to more clearly state which specific design requirements of 40 CFR 60 Subpart Cf are satisfied by compliance with 30 TAC §115.152. Tables C.5.1 and 2 below provide a comparison of the Chapter 115, §115.152 requirements with the corresponding requirements of 40 CFR 60 Subpart Cf.

Table C.5.1: Comparison of Gas Collection System Design Requirements

30 TAC §115.152 Requirements	40 CFR 60 Subpart Cf Requirements
§115.152(a)(1): GCCS must meet §60.752(b)(2)(ii) as proposed May 30, 1991, or alternate approved by the executive director: Proposed §60.752(b)(2)(ii): Install a collection and control system within 1 1/2 years of the submittal of the design plan or notification of intent. The collection system shall effectively capture the gas that is generated within the landfill. The collection system shall: (A) Be designed to handle the maximum expected gas flowrate over the lifetime of the gas control or treatment system equipment from the entire area of the landfill that warrants control over the equipment lifetime;	§60.33f(b)(2),(3) (2) Active. An active collection system must: (i) 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.
(B) Collect gas from each area, cell, or group of cells in the landfill in which refuse has been placed for a period of 2 years or more.	(ii) 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 5 years or more if active; or 2 years or more if closed or at final grade.
(C) Collect gas at a sufficient extraction rate.	(iii) Collect gas at a sufficient extraction rate.
No directly parallel requirement. However, per proposed §60.752(b)(2)(ii) cited above, the capture system must "effectively capture the gas that is generated within the landfill." In addition, the other requirements cited above will also minimize off-site migration.	(iv) Be designed to minimize off-site migration of subsurface gas
Proposed §60.752(b)(2)(ii), as referenced by 30 TAC §115.152(a)(1), does not distinguish between active and passive collection systems. Passive systems must meet the same requirements cited above. *30 TAC §115.152 does not address landfill liners. However, MSW landfills in Texas are independently required to comply with liner requirements in 30 TAC §330.331, which reflects the requirements of 40 CFR §258.40.*	(3) Passive. A passive collection system must: (i) Comply with the provisions specified in paragraphs (b)(2)(i), (ii), and (iv) of this section. (ii) Be installed with liners on the bottom and all sides in all areas in which gas is to be collected. The liners must be installed as required under §258.40 of this chapter.

Although there are some differences, the 30 TAC §115.152 gas collection system requirements summarized in Table C.5.1 are substantially equivalent to the corresponding requirements of Subpart Cf, §60.33f(b). The §115.152 requirements do not explicitly include the requirement of §60.33f(b)(2)(iv) that the collection system "be designed to minimize off-site migration of subsurface gas," but the commission believes that this concern is adequately addressed by the other requirements of §115.152 that require the GCS to "effectively capture the gas that is generated in the landfill" and "collect gas at a sufficient extraction rate." For passive collection systems, the §115.152 requirements also do not specifically require compliance with the liner requirements of 40 CFR §258.40, as referenced by 40 CFR §60.33f(b)(3)(ii). However, MSW landfills in Texas are required by 30 TAC §330.331 to comply with liner design requirements which are similar to and based on the requirements of 40 CFR §258.40, so the liner design criteria are addressed by other Texas regulations independently of §115.152.

Table C.5.2: Comparison of Control System Design Requirements

30 TAC §115.152 Requirements	40 CFR 60 Subpart Cf Requirements
§115.152(a)(2): Control NMOC gas emissions in one of the following ways: (A) the total collected gas is routed to an open flare designed and operated in accordance with 40 CFR §60.18; (B) the total collected gas is routed to a control device which reduces the total collected gas emissions by 98% or to less than 20 parts per million by volume; or *Note: §115.152(a)(2) does not specifically refer to use of boilers or process heaters as control devices, but they would still be required to meet the 98%/20 ppmv control requirements of §115.152(a)(2)(B).*	§60.33f(c). For approval, a state plan must include provisions for the control of the gas collected from within the landfill through the use of control devices meeting the following requirements, except as provided in §60.24. (1) A non-enclosed flare designed and operated in accordance with the parameters established in §60.18 except as noted in §60.37f(d); or (2) A control system designed and operated to reduce NMOC by 98 weight percent; or when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume … . (i) If a boiler or process heater is used as the control device, the landfill gas stream must be introduced into the flame zone. (ii) The control device must be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in §60.37f. (iii) For the closed landfill subcategory, the initial or most recent performance test conducted to comply with subpart WWW of this part; 40 CFR part 62, subpart GGG; or a state plan implementing subpart Cc of this part on or before July 17, 2014 is sufficient for compliance with this subpart.

30 TAC §115.152 Requirements	40 CFR 60 Subpart Cf Requirements
(C) the total collected gas is routed to a gas treatment system which processes the collected gas for subsequent use or sale. The sum of all emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of subparagraph (A) of this paragraph;	(3) Route the collected gas to a treatment system that processes the collected gas for subsequent sale or beneficial use such as … . 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 must be controlled according to either paragraph (c)(1) or (2) of this section. (4) All emissions from any atmospheric vent from the gas treatment system are subject to the requirements of paragraph (b) or (c) of this section. For purposes of this subpart, atmospheric vents located on the condensate storage tank are not part of the treatment system and are exempt from the requirements of paragraph (b) or (c) of this section.

The control system requirements of 30 TAC §115.152 as outlined in Table C.5.2 are phrased somewhat differently than the corresponding requirements of 40 CFR §60.33f(c), but substantively require the same level of emission control. If an open flare is used as a control device, both §115.152(a)(2)(A) and §60.33f(c)(1) require compliance with 40 CFR §60.18. If another type of control device is used, both §115.152(a)(2)(B) and §60.33f(c)(2) require either 98 percent emissions reduction, or control to an NMOC concentration of less than 20 ppmv. In addition, both §115.152(a)(2)(C) and §60.33f(c)(3)-(4) allow landfill gas to be routed to a gas treatment system which processes the collected gas for subsequent use or sale, as long as NMOC emissions from the treatment system are controlled by 98 percent or to a concentration of less than 20 ppmv. 30 TAC §115.152 does not specifically address the use of boilers or process heaters as a control device, but if those types of devices are used as a control device, they would still be required to meet the 98 percent reduction/20 ppmv control requirements of §115.152(a)(2)(B).

For these reasons, the requirements of proposed §113.2404(b) are still substantially equivalent to the corresponding Subpart Cc and Cf requirements for landfill gas collection and control systems. Preserving this previously approved aspect of the Texas MSWL state plan (originally approved under rule §113.2061(b)) is still appropriate and would not result in backsliding of emission standards. Owners or operators of landfills meeting the Chapter 115, §115.152 requirements must still comply with all other applicable requirements of proposed Chapter 113, Division 6 and the associated requirements of 40 CFR 60 Subpart Cf, except for 40 CFR §60.33f(b) and (c).

Attachment 1 to APPENDIX C.5

Excerpts from TCEQ's 1998 Adoption Preamble, 1998 Adopted State Plan, and 1999 *Federal Register* Notice of State Plan Approval

COASTAL MANAGEMENT PROGRAM CONSISTENCY REVIEW The commission has determined that this rulemaking relates to an action or actions subject to the Texas Coastal Management Program (CMP) in accordance with the Coastal Coordination Act of 1991, as amended (Texas Natural Resources Code §33.201 et. seq.), and the commission's rules at 30 TAC Chapter 281, Subchapter B, Consistency with the Texas Coastal Management Program. As required by 31 TAC §505.11(b)(2) and 30 TAC §281.45(a)(3) relating to actions and rules subject to the CMP, commission rules governing air pollutant emissions must be consistent with the applicable goals and policies of the CMP. The commission has reviewed this action for consistency with the CMP goals and policies in accordance with the regulations of the Coastal Coordination Council. For the action in 30 TAC §§113.2060, 113.2061, 113.2067, and 113.2069, the commission has determined that the rules are consistent with the applicable CMP goal expressed in 31 TAC §501.12(1) by protecting and preserving the quality and values of coastal natural resource areas and the policy in 31 TAC §501.14(q) which requires the commission protect air quality in coastal areas. The purpose of 30 TAC §§113.2060, 113.2061, 113.2067, and 113.2069 is to control air contaminants from MSW landfills. The sections are in compliance with the regulations adopted under 40 CFR adopted under the FCAA, 42 United States Code Annotated, §7401, et. seq. to protect and enhance air quality in the coastal area so as to protect coastal natural resource areas (CNRAs) and promote the public health, safety and welfare.

HEARINGS AND COMMENTERS Public hearings on the proposal were held in Irving, Texas on May 29, 1998, in Austin, Texas on June 1, 1998, and in Houston, Texas on June 4, 1998. Only one commenter, EPA, presented oral comments at the hearings. Written comments were received from Browning-Ferris Industries (BFI), EPA, SCS Engineers (SCS), and the Texas Chapter of the Solid Waste Association of North America (TxSWANA). The public comment period closed on June 8, 1998.

EPA commented that 40 CFR Part 60.24(f) allows for less stringent emission limits or longer compliance schedules, but it does not allow the exemption of an entire class of facilities. EPA also stated that the use of surrogate NMOC values conflicts with the NMOC estimation methods in 40 CFR 60.34(c).

The commission believes that it has applied a less stringent standard to landfills that closed prior to October 9, 1993 in accordance with 40 CFR §60.24(f). The commission bases the application of a less stringent standard for landfills that closed prior to October 9, 1993, on §60.24(f)(1) for "unreasonable cost of control resulting from plant age" and on §60.24(f)(3) for "other factors specific to the facility (or class of facilities) that make application of a less stringent standard or final compliance time significantly more reasonable." The technical justification from Appendix A of the State Plan serves to support this assertion by demonstrating that under the Emission Guideline standards, the landfills that closed prior to October 9, 1993, would very likely not be required to install controls. The application of a less stringent standard would ensure that these landfills would not be required to install controls, thus effectively exempting these landfills from the Emission Guidelines rule. Using NMOC values that reflect actual Tier II testing at existing landfills is justified for this analysis because the commission did not intend to duplicate the steps that a landfill would have to follow in complying with the Emission Guidelines, but rather is predicting the most probable final result.

The commission performed an inventory of landfills that closed between November 8, 1987, and October 9, 1993, to determine which landfills contained sufficient material to require emission testing. The commission did not have reported design capacities for these landfills as this reporting was not a regulatory requirement prior to October 9, 1993. The commission estimated capacity using the following two methods.

First, assuming an average landfill life of 30 years, the commission determined that a facility would have to accept over 251 tons per day of refuse to exceed the testing threshold of 2.5 million megagrams (2.5 M Mg) of placed material. This is approximately 2.75 million tons of material. Second, assuming an average depth of 30 feet and an assumed density of compacted waste, the commission estimated a landfill would have to exceed 67.6 acres to potentially have a capacity greater than 2.5 M Mg.

Using these estimates, there are seven closed landfills that have the potential to exceed the 2.5 M Mg threshold. Two of these are Type IV landfills, which are not authorized to accept household waste and are not subject to the emission guidelines. Of the remaining five, the landfills operated by the City of Killeen and the City of El Paso were expected to exceed the emission threshold of 50 Mg per year on NMOC. A closer analysis of the permit file showed that the El Paso facility closed prior to November 8, 1987.

The commission then performed an estimate of emissions from these landfills using NMOC emission rates obtained from tests conducted at existing and closed facilities in accordance with the methods in 40 CFR §60.754. 40 CFR §60.24(f)(3) allows the use of less stringent emission standards provided there are other factors specific to a class of facilities that make the standard significantly more reasonable. In this case, the commission has sample emission rates from landfills across the state that indicate that an NMOC emission rate of 439 parts per million (ppm) is more reasonable and representative than the EPA default rate of 4,000 ppm. The commission staff and EPA have extensively discussed this issue, and EPA agrees that the use of a rate below the default rate and more representative of monitored landfill emissions within Texas is appropriate for this specific analysis of closed landfills. The commission staff used an arithmetic mean of monitored emission levels which is the origin of the 439 ppm figure. EPA prefers the use of a figure that is one standard deviation above the mean or approximately 706 ppm. Using this higher figure, the commission calculated an estimated emission rate of 56 Mg per year for Killeen by June of 2001, the earliest date by which controls could be installed. This rate would fall below the emission control threshold of 50 Mg per year by 2004. This emission rate drops even lower if the high and low NMOC monitored values are omitted from the calculations and the commission uses a rate one standard deviation above the arithmetic mean.

In summary, the emission rate for Killeen is borderline and will go slightly above to slightly below the control threshold depending on the method of statistical analysis. Using the higher EPA emission rate results in an emission level that drops below the predicted emission threshold within three years of installing controls. The commission has estimated that the cost of control for affected landfills will be $10,000-$12,000 per acre. The Killeen facility is 174 acres which results in a control cost in excess of $1.74 million. The commission believes this to be an excessive and unreasonable cost based on Killeen's location outside ozone non attainment areas and

the commission's analysis demonstrating that the facility would drop below the yearly emission threshold within three years of control installation. Therefore the commission will retain the proposed definition of "existing municipal solid waste landfill" that will exclude the Killeen facility from retrofitting controls.

40 CFR §60.34(c) requires that the state plan contain provisions for use of an approved test method for measuring NMOC. This requirement is in the Texas state plan.

Prior to October 9, 1993, there was no regulatory requirements to report design capacity to the commission. In the absence of these records, the commission believes that its estimation of capacities and consequent definition of existing landfill is reasonable and appropriate. Further refinement of the estimation would require a site-by-site analysis.

EPA commented that application for a less stringent emission standard or compliance schedule is subject to the Regional Administrator's approval, and the rule should include the appropriate language.

The commission does not object to including the EPA Regional Administrator's approval of less stringent emission standards or longer compliance schedules and has made the appropriate change to the rule language.

EPA also suggested that the state plan establish increments of progress for any compliance schedule longer than 12 months though federal law does allow increments to be submitted at a later date for individual facilities.

The proposed rule referred to 40 CFR Part 60 §§60.751-60.759 which contain the requirement for affected landfills to install controls within 30 months of determined application of the emission guidelines. The commission believes that this is a sufficient compliance schedule and wishes to leave the details of contract management to the operators of the affected facilities for greater flexibility. Additionally, the state plan for Oregon, which used an identical compliance schedule as the Texas plan, was approved by EPA. The commission has elected to retain the proposed language and will not include detailed increments of progress requirements.

BFI commented that the commission should incorporate by reference revisions to the federal emission guidelines expected as a result of a settlement between National Solid Waste Management Association (NSWMA) and EPA. They also stated that it would be appropriate to address in the preamble to the final rule the extent to which rate of progress requirements for the Dallas/Fort Worth area would be affected by the promulgated rule and suggested that the commission provide for the repeal of 30 TAC §§115.152-115.159 upon EPA approval of the Texas state plan under FCAA §111(d). TxSWANA also supported this repeal.

The commission has included in the adopted rules, state plan, and preamble, references to the amendment date of the federal rules. This amendment resulted from the settlement between NSWMA and EPA. The commission has also included language in the rules that states that compliance with §§115.152-115.159, Municipal Solid Waste Landfills, will be considered compliance with the adopted emission guidelines. Operators of landfills currently regulated under Chapter 115 may use actual NMOC measurement to determine if a particular landfill exceeds the 150 Mg control threshold in §115.152. The commission believes it is necessary to leave the Chapter 115 requirements in place because 30-34 months will be required for controls specified under these adopted emission guidelines to be implemented. As the adopted emission guidelines become effective the commission will examine the Chapter 115 requirements and make any necessary amendments.

TxSWANA and SCS supported the exclusion of landfills closed prior to October 9, 1993, from the state plan. TxSWANA also commented that §113.2069(b) of the proposal be modified to reference landfills of a design capacity "equal to or greater than 2.5 million megagrams and 2.5 million cubic meters" consistent with the NSWMA and EPA settlement.

The commission has made the appropriate change in the rule language and state plan.

STATUTORY AUTHORITY The new subchapter and sections are adopted under the TCAA, Texas Health and Safety Code, §382.011, which provides the commission authority to control the quality of the state's air; §382.012, which gives the commission authority to develop a comprehensive plan for control of the state's air; and §382.017, which provides the commission with the authority to adopt rules consistent with the policy and purposes of the TCAA and to specify control methods when required by federal law.

§113.2061. Standards for Air Emissions.

(a) An owner or operator of an existing municipal solid waste landfill (MSWLF) shall comply with all provisions specified in 40 Code of Federal Regulations (CFR) Part 60, §§60.751-60.759 as promulgated on March 12, 1996, and amended on August 17, 1998. For purposes of this rule, the term "Administrator" wherever it appears in 40 CFR Part 60, §§60.751-60.759 shall refer to the commission.

(b) Gas collection and control systems approved by the commission and installed at an MSWLF in compliance with §115.152 of this title (relating to Control Requirements) satisfy the gas collection and control system design requirements of this section.

§113.2067. Exemptions.

A municipal solid waste landfill (MSWLF) may apply for less stringent emission standards or longer compliance schedules than those otherwise required by this division, provided that the owner or operator demonstrates to the executive director and EPA, the following:

(1) unreasonable cost of control resulting from MSWLF age, location, or basic MSWLF design;

(2) physical impossibility of installing necessary control equipment; or

(3) other factors specific to the MSWLF that make application of a less stringent standard or final compliance time significantly more reasonable.

§113.2069. Compliance Schedule.

(a) An owner or operator subject to the requirements of this division shall submit the initial design capacity report in accordance with 40 Code of Federal Regulations (CFR) Part 60, §60.757(a)(2) to the executive director within 90 days from the date the commission publishes notification in the *Texas Register* that the United States Environmental Protection Agency (EPA) has approved this rule.

(b) An owner or operator of a municipal solid waste landfill with a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters and subject to the requirements of this division shall also submit the initial non-methane organic compound emission rate report in accordance with 40 CFR §60.757(b)(2) to

APPENDIX A

JUSTIFICATION FOR EXCLUDING PRE-SUBTITLE D CLOSED MSW LANDFILLS FROM THE PLAN TO CONTROL NMOC EMISSIONS

Under Subpart B, 40 CFR 60.24(f), states are authorized to provide for less stringent emission standards or longer compliance schedules for MSW landfills, EG requirements, promulgated under Subpart Cc.

Section 60.24(f) defines general criteria that states must demonstrate to apply less stringent emission standards or longer compliance schedules for a facility or a class of facilities. These criteria include:

a. Unreasonable cost of control resulting from plant age, location, or basic process design;
b. Physical impossibility of installing necessary control equipment; or
c. Other factors specific to the facility or class of facilities that make the application of a less stringent standard or final compliance time significantly more reasonable.

The revised Chapter 113 rules exclude the 142 MSW landfills closed between November 8, 1987, and October 9, 1993, from the requirements of the EG based on criteria (a) and (c). The commission provides general justification of unreasonable cost, and other factors, to demonstrate that the implementation of the EG on these closed facilities is unreasonable. This general justification is also accompanied by a technical impact analysis of projected NMOC emissions from these closed facilities. This technical analysis demonstrates that NMOC emissions from facilities that closed between November 8, 1987, and October 9, 1993, are not of significant concern to necessitate the implementation of these requirements. The commission asserts that the cost justification analysis, and other identified factors, associated with controlling closed landfills are adequate to meet 60.24(f) criteria (a) and (c). The accompanying technical analysis is provided to support the cost justification and complement the demonstration that the implementation of the EG on landfills closed between November 8, 1987, and October 9, 1993, is economically unreasonable.

1. Cost Analysis and Other Factors

The commission has determined that MSW landfills that closed prior to October 9, 1993, may not be economically able to comply with the EG requirements. Many of these landfills would be exempt based on either their design capacity being less than 2.5 M Mg or their emissions being less than 50 Mg per year.

The EG for MSW landfills defines an existing landfill as any MSW landfill that has accepted waste at any time after November 8, 1987, or has design capacity available for future waste deposition. Thus, the EG is retroactively applicable to MSW landfills, some of which may have closed nearly 11 years ago. Since full compliance (i.e. to have controls in place) will not be realized until three years after the state plan is approved by the EPA, controls may be imposed on MSW landfills which may have been closed for nearly 14 years. Furthermore, the cost of preparing design capacity and emissions reports that are based on site-specific data may be cost prohibitive, especially for municipally-owned landfills.

Prior to the implementation of 40 CFR Part 258 (popularly know as the "Subtitle D" requirements) which became effective on October 9, 1993, landfills were not subject to any federal post-closure care requirements. Thus, landfills which have closed after November 8, 1987, and before October 9, 1993, no longer have the option of creating a revenue stream to pay for the cost of compliance. In addition, these landfills were not subject to any financial assurance requirements which may be used by states to determine a landfill's ability to pay for the cost of controls. Since emissions from closed landfills decrease exponentially over time, the commission asserts that the implementation of these requirements are cost-ineffective.

The commission records may not accurately reflect all of the landfills that closed after November 8, 1987. Many of these landfills were unpermitted, grandfathered facilities. Since the ownership of these landfills may have been transferred several times, it may be impossible to identify the responsible parties for these facilities. The closed landfills which are reflected in the commission records did not report their total design capacities because they were not required to do so in the past. Thus, it will be difficult for the commission to properly enforce the EG requirements on these landfills.

The NSPS and the EG were proposed on May 30, 1991, with a projected adoption date set for December 1991. The proposed EG specified that landfills that had closed prior to November 8, 1987, be exempted from the EG, intending that the EG would be applicable only for landfills that closed within five years from the date the EG was to be implemented. However, the NSPS and EG were not adopted until March 12, 1996. The final EG maintained November 8, 1987, as the determining date of which closed landfills should be controlled. The commission maintains that the final EG is inconsistent with the way the EG was initially intended to apply. Since the implementation date of the EG was moved up by five years due to the delay in adopting the EG, the November 8, 1987, date should have also been moved up by five

years. Considering that emissions from closed landfills decrease exponentially over time, the commission maintains that the requirement to control landfills that closed 11 years ago is overly stringent and unreasonable.

2. Technical Analysis

The technical analysis utilizes the EPA landfill gas emissions estimation model to project future NMOC emissions from closed MSW landfills. Using various approaches in determining model parameters, the commission generates emission curves to estimate each facility's expected NMOC emissions rate by the year 2000. The commission maintains that most, if not all, landfills which closed between November 8, 1987 and October 9, 1996, have NMOC emission rates below the 50 Megagrams (Mg) per year emissions rate cutoff by the year 2000. The generated curves are based on using a regulatory generation potential, Lo of 170, a K of 0.02 for arid landfills and 0.05 for non-arid landfills, and representative site-specific NMOC concentrations (C_{NMOC}) of 475 ppm for arid landfills and 479 ppm for non-arid landfills. The analysis also assumes an average landfill life of 30 years and an average landfill depth of 30 feet.

a. Projected NMOC Emissions Using Site-Specific Data

The EPA regulatory emission estimation model was used to estimate year 2000 emissions for MSW landfill facilities with several assumed design capacities and closure years. These test cases are shown in Table A. In each test case, an average landfill life of 30 years was used. The results obtained from these test cases were based on using the default regulatory generation potential, Lo of 170 and generation rate constant, K of 0.05 for non-arid landfills and 0.02 for arid landfills. An average site-specific data was, however, used for C_{NMOC} in lieu of the default value specified in the model. This is consistent with the EPA approach to use site-specific data whenever this data is available.

TABLE A

Test Cases

Design Capacity (Mg)	Closure Year	Average landfill life (yrs)
3.0	1987	30
3.0	1990	30
3.0	1993	30
3.0	1996	30
3.0	1999	30
6.0	1987	30
6.0	1990	30
6.0	1993	30
6.0	1996	30
6.0	1999	30
9.0	1987	30
9.0	1990	30
9.0	1993	30
9.0	1996	30
9.0	1999	30
12.0	1987	30
12.0	1990	30
12.0	1993	30
12.0	1996	30
12.0	1999	30

b. Average Site-Specific C_{NMOC} Concentrations

The commission is currently regulating some MSW landfills under 30 TAC Chapter 115, Control of Air Pollution From Volatile Organic Compounds, §§115.152 to 115.159. In compliance with the state rule and the EPA NSPS, several MSW landfills in Texas conducted Tier II tests to determine site-specific NMOC concentrations. Table B shows a list of these facilities and the performed test methods.

TABLE B

Landfill NSPS and Chapter 115 Tier II C_{NMOC} Concentrations

Landfill	MSW Permit No.	County	Design Capacity (million m^3 or Mg)	NMOC Concentration (ppm)	Test Method
BFI (Southwest) [Canyon, TX]	1663A	Randall	3.0	290	25C
Arlington	358	Tarrant	7.36	821	25C
Baytown Landfill	1535A	Harris	8.97	387	25C
BFI FM521/Blue Ridge	1505	Fort Bend	11.80	324	25C
BFI Beaumont/Golden Triangle	2027	Jefferson	6.6	691	25C
Corsicana Landfill	2190	Nazarro	21.62	429	25C
Farmers Branch, Camelot	1312	Dallas	10.80	411	18
Hawthorn Park	2185	Harris	3.98	128	25C
Lacy Lakeview Recycling and Disposal Facility	1646A	McLennan	4.71	1122	25C
Laidlaw/Turkey Creek	1417B	Johnson	15.52	60	25C
Mexia Landfill	1558A	Limestone	3.40	541	25C
Rock Prairie Road	1444A	Brazos	3.18	498.75	25C
Temple Recycling and Disposal Facility	692	Bell	5.05	251	25C
Williamson County Recycling and Disposal Facility	1405A	Williamson	9.63	747	25C
Lubbock (arid site)	69	Lubbock	5.13	516	25C
City of El Paso-Clint (arid site)	1482	El Paso	7.0	433	25C

Table B includes C_{NMOC} data for 14 sites located in non-arid areas and two sites located in arid areas. An arithmetic average C_{NMOC} of 475 for arid landfills and 479 for non-arid landfills were computed and used as representative C_{NMOC} for arid and non-arid landfills in Texas.

c. Year 2000 Emission Estimates

The results obtained from the test cases were then used to generate graphs which show the expected levels of NMOC emissions by the year 2000 for a typical representative facility with a specified design capacity and closure year. Figures 1 and 2 show year 2000 emission rates for typical facilities located in arid and non-arid areas, respectively.

Figure A: Arid Areas

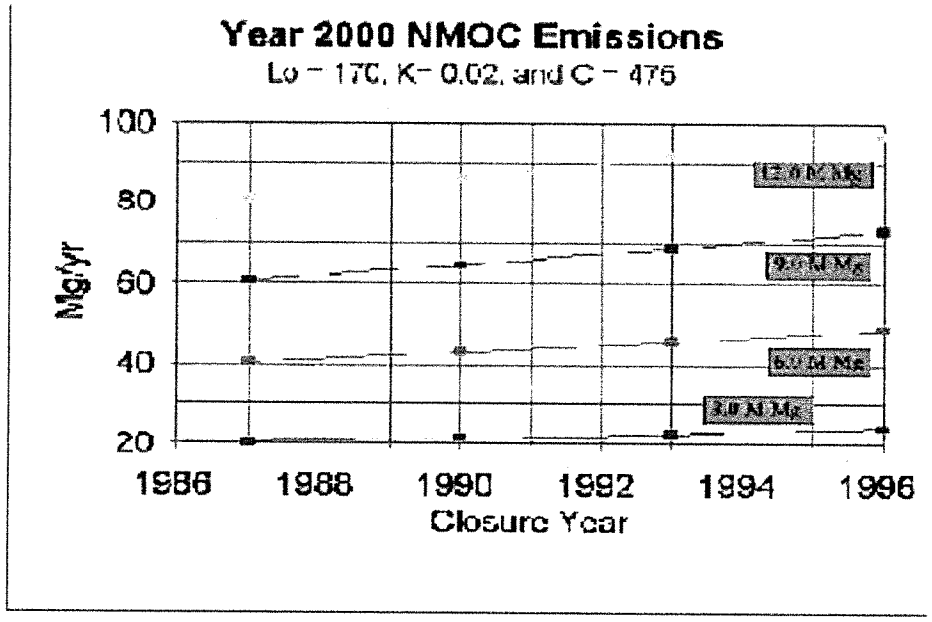
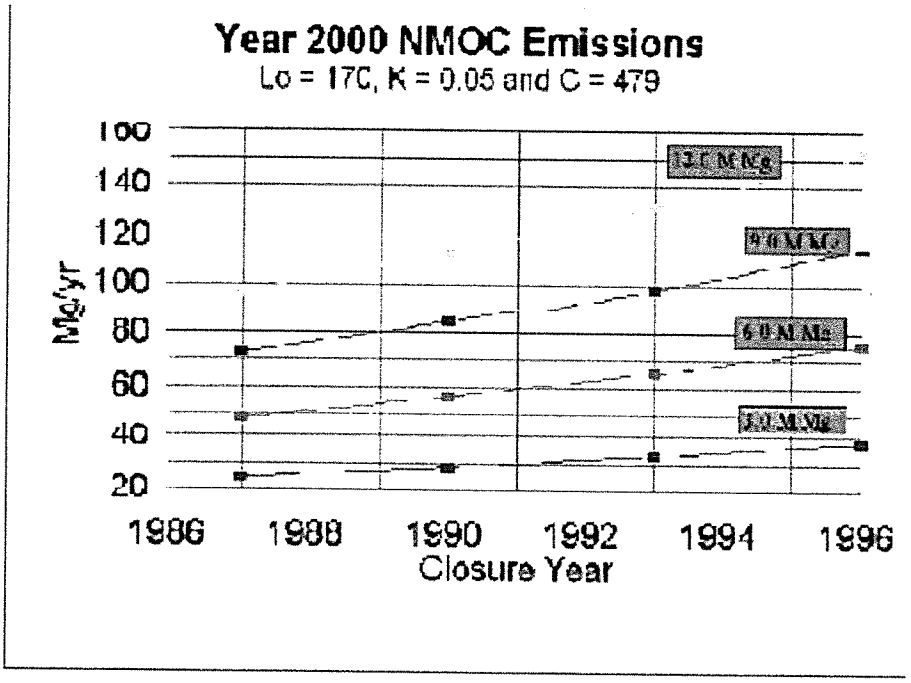


Figure 2: Non-Arid Areas



d. MSW Landfills Inventory

Of the 459 MSW landfills which are subject to the EG and the NSPS in Texas, 244 have closed since November 8, 1987. 142 landfills closed between November 8, 1987, and October 9, 1993, and 102 landfills closed between October 9, 1993, and February 1997.

The commission records may not accurately reflect all of the landfills that closed after November 8, 1987. The closed MSW landfills which are reflected in the commission records did not report total design capacities because this was not a requirement in the MSW regulations. However, some of the data that had been reported may be useful in estimating total design capacities for these facilities. The commission records contain information on the daily refuse acceptance rate and the area, specified in acres, for each reported closed landfill. With an assumed average life for each landfill, the daily refuse acceptance rate may be used to estimate total design capacity. Similarly, with an assumed average depth for each landfill, the area size may be used to develop another estimate of the total design capacity. A more representative estimate of the total design capacity would be the average of the two design capacities generated by the daily refuse acceptance data and the area size data.

e. Design capacity

A typical average life of 30 years and a depth of 30 feet were assumed as representative conditions of all closed landfills. With an average life of 30 years, a landfill has to exceed 251 tons per day of daily acceptance rate to potentially be considered to have a total design capacity greater that 2.5 million (M) Mg:

$$2500000.Mg(1.1\frac{tons}{Mg})(\frac{1}{30year})(\frac{1year}{365days})=251\frac{tons}{day}$$

Table C shows all MSW landfills which closed between November 8, 1987, and October 9, 1993, and had daily refuse acceptance rate greater than 250 tons per day. Table C also shows the estimated design capacities after adjustments were made to account for variations in area size.

TABLE C: Closed MSW landfills with Daily Refuse Acceptance Rate Greater Than 251

Permit Number, Landfill Type		Owner/Operator	Daily Accept. rate (tons/day)	Area Size (acres)	Adjusted Design Capacity M Mg
14	4	BFI/Pinn Road	670	36	4.00
667	3	Stonewall County	250	5	1.34
730	1	City of El Paso	1500	619	18.91
1134	1	City of Abilene	250	111.2	3.30
1259	4	Olshan Demolition Co.	4009	18.59	20.3
1472	1	Warner, Dwaine	300	14	1.75

With an average depth of 30 feet, an MSW landfill has to exceed 67.6 acres to potentially be considered to have a design capacity greater than 2.5 M Mg:

$$2500000m^3(35.3147\frac{ft^3}{m^3})(\frac{1}{30ft})(2.29568E-5\frac{acre}{ft^2})=67.6acres$$

Table D shows all MSW landfills which closed between November 8, 1987, and October 9, 1993, and had an area size greater than 67.6 acres. Table D also shows the estimated design capacities after adjustments were made to account for variations in the daily acceptance rate.

TABLE D: MSW landfills with Areas Size Greater Than 67.6 Acres

Permit Number, Landfill Type		Owner/Operator	Area Size (acres)	Daily Accept. rate (tons/day)	Adjusted Design Capacity M Mg
354	1	City of Alpine	122.5	14	2.33
366	1	City of Anson	75.9	7	1.44
424	1	City of Corpus Christi	90.74	150	2.42
440	1	City of Denison	110	91	2.48
455	2	City of Fairfield	65.5	6	1.24
505	1	Joint Cities LRB	95	26	1.89
513	1	City of Killeen	418.25	100	8.23
528	1	City of Liberty	78.56	50	1.7
690	1	City of Tyler	185	0	3.42
730	1	City of El Paso	619	1500	18.91
742	1	Gregg County	116	21	2.25
915	2	City of Nixon	78.1	3	1.46
976	1	City of Fort Stockton	87.7	18	1.71
1051	3	A. R. Heisler	77.21	1	1.43
1087	1	City of Graham	275	13	5.15

1134	1	City of Abilene	111.2	250	3.3
1093	1	City of Matagorda	71.25	25	1.44
1250	1	City of West University Place	75	32	1.55

Based on Tables C and D, only 7 of the 142 MSW landfills that closed between November 8, 1987, and October 9, 1996, are estimated to be over 2.5 M Mg total design capacity. Two of these 7 MSW landfills are type IV MSW landfills. Type IV MSW landfills, by definition, are not authorized to accept household waste and therefore, are not subject to the EG. Table E shows the list of the MSW landfill facilities with estimated total design capacities greater than 2.5 M Mg. Table E also shows the estimated year 2000 NMOC emission rates associated with these facilities. These estimated are derived from Figures A and B.

Table 5: MSW Landfills Greater Than 2.5 M Mg Design Capacity and Year 2000 Emission

Permit Number, Landfill Type		Owner/Operator	Design Capacity (M Mg)	Closure Year	Estimated year 2000 Emissions
513	1	City of Killeen	8.23	3/1990	74
690	1	City of Tyler	3.42	3/1990	33
730	1	City of El Paso	18.91	6/1988	130
1087	1	City of Graham	5.15	1988	40
1134	1	City of Abilene	3.3	3/1990	24

Of the 5 facilities with estimated design capacities greater than 2.5 M Mg, only two are expected to exceed the 50 Mg per year NMOC emission rate cutoff by the year 2000. These are the City of Killeen, permit number 513, and the City of El Paso, permit number 730.

Further analysis into these two sites has revealed the following:

Only 174 acres of the 418 acres that were initially permitted by the City of Killeen, permit number 513, had actually been filled. This warrants an adjustment to the NMOC emission rate estimate to account for the refuse that had only been placed in the landfill. Based on 174 acres, the estimated design capacity for the City of Killeen MSW landfill was modified to 3.72 M Mg and its associated year 2000 NMOC emissions rate was consequently estimated at 39 Mg per year.

Only 147 acres of the 619 acres that were initially permitted by the City of El Paso, permit number 730, had actually been filled. In addition the landfill had not received waste since October 1985 and therefore, would not be subject to the EG.

Of the 142 MSW landfills that closed between November 8, 1987, and October 9, 1993, only Killeen was expected to exceed the 50 Mg per year NMOC emission rate cutoff by the year 2000. The emission rate for Killeen is borderline and will go slightly above to slightly below the control threshold depending on the method of statistical analysis. The commission estimates that the emission rate drops below the EPA emission threshold within three years of installing controls. The commission has estimated that the cost of control for affected landfills will be $10,000-$12,000 per acre. The Killeen facility is 174 acres which results in a control cost in excess of $1.74 million. The commission believes this to be an excessive and unreasonable cost based on Killeen's location outside ozone non attainment areas and the commission's analysis demonstrating that the facility would drop below the yearly emission threshold within three years of control installation. Therefore the commission will retain the proposed definition of "existing municipal solid waste landfill" that will exclude the Killeen facility from retrofitting controls.

F. Unfunded Mandates

Under section 202 of the Unfunded Mandates Reform Act of 1995 (''Unfunded Mandates Act''), signed into law on March 22, 1995, EPA must prepare a budgetary impact statement to accompany any proposed or final rule that includes a Federal mandate that may result in estimated annual costs to state, local, or tribal governments in the aggregate; or to the private sector, of $100 million or more. Under section 205, EPA must select the most cost-effective and least burdensome alternative that achieves the objectives of the rule and is consistent with statutory requirements. Section 203 requires EPA to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted by the rule.

EPA has determined that the approval action promulgated does not include a Federal mandate that may result in estimated annual costs of $100 million or more to either state, local, or tribal governments in the aggregate, or to the private sector. This Federal action approves preexisting requirements under state or local law, and imposes no new requirements. Accordingly, no additional costs to state, local, or tribal governments, or to the private sector, result from this action.

G. Submission to Congress and the Comptroller General

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the U.S. Comptroller General prior to publication of the rule in the **Federal Register**. This rule is not a ''major rule'' as defined by 5 U.S.C. 804(2).

H. Petitions for Judicial Review

Under section 307(b)(1) of the CAA, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by August 16, 1999. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this rule for the purposes of judicial review, nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. [See section 307(b)(2).]

List of Subjects 40 CFR Part 62

Environmental protection, Air pollution control, Intergovernmental relations, Reporting and recordkeeping requirements.

Dated: June 1, 1999.

William Rice,

Acting Regional Administrator, Region VII.

Chapter I, title 40 of the Code of Federal Regulations is amended as follows:

PART 62—[AMENDED]

1. The authority citation for Part 62 continues to read as follows:

Authority: 42 U.S.C. 7401 et seq.

Subpart Q—Iowa

2. Subpart Q is amended by adding § 62.3914 and an undesignated center heading to read as follows:

Air Emissions From Existing Hospital/ Medical/Infectious Waste Incinerators

§ 62.3914 Identification of plan.

(a) Identification of plan. Iowa plan for the control of air emissions from hospital/medical/infectious waste incinerators submitted by the Iowa Department of Natural Resources on January 29, 1999.

(b) Identification of sources. The plan applies to existing hospital/medical/ infectious waste incinerators constructed on or before June 20, 1996.

(c) Effective date. The effective date of the plan is August 16, 1999.

[FR Doc. 99–15165 Filed 6–16–99; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 62

[TX–108–1–7408a; FRL–6361–4]

Approval and Promulgation of State Plans for Designated Facilities and Pollutants: Texas

AGENCY: Environmental Protection Agency (EPA).

ACTION: Direct final rule.

SUMMARY: We are approving the section 111(d) Plan submitted by the Governor of Texas on November 3, 1998, to implement and enforce the Emissions Guidelines (EG) for existing Municipal Solid Waste (MSW) Landfills. The EG require States to develop plans to collect landfill gas from large MSW landfills.

DATES: This direct final rule is effective on August 16, 1999, without further notice, unless we receive adverse comments by July 19, 1999. If we receive adverse comments, we will publish a timely withdrawal of the direct final rule in the **Federal Register** and inform the public that the rule will not take effect.

ADDRESSES: You should address comments on this action to Lt. Mick Cote, EPA Region 6, Air Planning Section (6PD–L), 1445 Ross Avenue, Suite 1200, Dallas, Texas 75202. Copies of all materials considered in this rulemaking may be examined during normal business hours at the following locations: EPA Region 6 offices, 1445 Ross Avenue, Suite 700, Dallas, Texas 75202, and at the Texas Natural Resource Conservation Commission offices, 12124 Park 35 Circle, Austin, Texas 78753.

FOR FURTHER INFORMATION CONTACT: Lt. Mick Cote at (214) 665–7219.

SUPPLEMENTARY INFORMATION:

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I. What Action Is Being Taken by EPA Today?

We are approving the Texas State Plan to control landfill gas from existing MSW landfills, as submitted to us by Texas on November 3, 1998. This State Plan does not affect those existing MSW landfills located in Indian Country.

We are publishing this action without prior proposal because we view this as a noncontroversial action and anticipate no adverse comments. However, in a separate document in this **Federal Register** publication, we are proposing to approve the revision should significant, material, and adverse comments be filed. This action is effective August 16, 1999, unless by July 19, 1999, adverse or critical comments are received. If we receive such comments, this action will be withdrawn before the effective date by publishing a subsequent document that will withdraw the final action. All public comments received will be addressed in a subsequent final rule based on this action serving as a proposed rule. We will not institute a second comment period on this action.

Any parties interested in commenting on this action should do so at this time. If no such comments are received, the public is advised that this action is effective August 16, 1999.

II. Why Do We Need To Regulate Landfill Gas?

Landfill gas contains a mixture of volatile organic compounds (VOCs), other hazardous air pollutants (HAPs), and methane. These VOC emissions can contribute to ozone formation, which can cause adverse health effects to humans and vegetation. The health effects of HAPs include cancer, respiratory irritation, and damage to the nervous system. Methane emissions contribute to global climate change and can result in fires or explosions when they accumulate in structures on or off the landfill site. We presented our concerns with the health and welfare effects of landfill gases in the preamble to our proposed EG (56 FR 24468, May 30, 1991).

III. What Is Being Acted on in This Document?

When we developed our New Source Performance Standard (NSPS) for landfills, we also developed EG to control landfill gas from older landfills (See 61 FR 9905–9944, March 12, 1996). The Texas Natural Resource Conservation Commission (TNRCC) developed a State Plan, as required by section 111(d) of the Clean Air Act (the Act), to adopt the EG into their body of regulations, and we are acting today to approve it.

IV. What Is a State Plan?

Section 111(d) of the Act requires that ''designated'' pollutants controlled under the NSPS must also be controlled at existing sources in the same source category. To ensure proper implementation of the requirements of section 111(d), we approved 40 CFR part 60, subpart B (40 FR 53340, November 17, 1975). Subpart B provides that, once an NSPS is promulgated, we then publish an EG applicable to the control of the same pollutant from designated (existing) facilities. Affected States must then adopt the EG into their body of regulations.

V. What Does the Texas State Plan Contain?

The Texas State Plan was reviewed for approval against the following criteria: 40 CFR Part 60, §§ 60.23 through 60.26, subpart B—Adoption and Submittal of State Plans for Designated Facilities; and, 40 CFR part 60, §§ 60.30c through 60.36c, subpart Cc—Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills.

The evaluation of the Texas State Plan indicates that it contains:

1. a demonstration of the State's legal authority to implement the section 111(d) State Plan, as authorized under the Texas Clean Air Act Sections 382.011, 382.012, and 382.017;
2. an incorporation of the Federal regulations into the Texas Administrative Code (TAC) at 30 TAC Chapter 113, Subchapter D, Sections 113.2060, Definitions; 2061, Standards for Air Emissions; 2067, Exemptions; and 2069, Compliance Schedule;
3. an inventory of approximately 113 known designated facilities, with estimated design capacities, as listed in Tables 4, 5a, and 5b of the State Plan;
4. emission limits that are as stringent as the EG, listed in TAC Section 113.2061;
5. a process to review gas collection system design plans;
6. a final compliance date 30 months after the date a designated facility reaches or exceeds 50 Mg of NMOC emissions annually;
7. testing, monitoring, reporting and recordkeeping requirements for the designated facilities, as listed in TAC Section 113.2061;
8. records from the three public hearings; and,
9. provisions for progress reports to EPA.

The Texas State Plan does deviate from the EG on two issues. The EG defines designated facilities as those that have accepted waste after November 8, 1987. The TNRCC provided a detailed technical analysis which indicates that no designated landfills which closed between November 8, 1987, and October 9, 1993, will have estimated non-methane organic compounds (NMOC) emissions above the 50 megagram (Mg) control threshold by the year 2000. Controlling these closed landfills would not result in a significant reduction in NMOC emissions compared to the cost to install gas collection systems at these sites. Our Code of Federal Regulations (CFR), at 40 CFR § 60.24(f), allows for less stringent regulations if a technical or economic justification supports it. Based on § 60.24(f), the TNRCC adjusted its definition to reflect actual conditions in Texas. The definition of MSW landfills in Texas then includes facilities that have accepted waste since November 8, 1987, and either closed after October 8, 1993, or are currently still accepting waste. We agree with the justification for excluding this group of MSW landfills from the State Plan, and accept the State's use of § 60.24(f) to change its definition of MSW landfills in Texas.

Second, the Texas State Plan does not include specific increments of progress towards the final 30 month compliance date, as discussed in 40 CFR 60.24(e)(1). However, the State can develop separate increments of progress for each designated facility and submit these as revisions to the State Plan within a year of the Federal approval of the Texas State Plan (40 CFR 60.24(e)(2)). For this reason we can approve the State Plan in its current form. We fully expect the TNRCC to submit increments of progress within a year of our approval of this State Plan. Please request a copy of our official file to review our detailed discussion of the requirements of the NSPS and EG, along with our evaluation of the Texas State Plan.

VI. How Can I Determine Whether My Landfill Is Subject to These Regulations?

Any MSW landfill which began construction, reconstruction or modification before May 30, 1991, and has accepted waste at any time since October 9, 1993, is affected by the EG and the Texas State Plan. If your facility meets these two criteria, your landfill is subject to these regulations.

VII. What Steps Do I Need To Take?

- You must report your landfill's design capacity to the TNRCC within 90 days of the effective date of our approval of the Texas State Plan (See Section 113.2069).
- If your landfill has a design capacity above 2.5 million Mg, you must also estimate and report your annual NMOC emission rate to the TNRCC within the same 90-day timeframe (See Section 113.2069).
- If your landfill has a design capacity below 2.5 million Mg, you have met all the requirements of the Texas State Plan. However, if you modify your landfill and increase the design capacity above the 2.5 million Mg threshold, you must submit an amended design capacity report to the TNRCC within 90 days of the modification. You must also estimate and submit your annual NMOC emission rate to the TNRCC within 90 days of the modification (Section 113.2061). Your landfill will then be considered an NSPS source and subject to the requirements listed under 40 CFR part 60, subpart WWW.
- You must have a gas collection system installed and operating within 30 months of the date you project to be at or above the 50 Mg threshold (Section 113.2061).
- You must record and keep accurate records regarding site information and

gas collection system operational data (Section 113.2061).

VIII. Administrative Requirements

A. Executive Order (E.O.) 12866

The Office of Management and Budget (OMB) has exempted this regulatory action from E.O. 12866, entitled ''Regulatory Planning and Review.''

B. Executive Order 12875

Under E.O. 12875, EPA may not issue a regulation that is not required by statute and that creates a mandate upon a State, local or tribal government, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by those governments, or EPA consults with those governments. If EPA complies by consulting, E.O. 12875 requires EPA to provide to the OMB a description of the extent of EPA's prior consultation with representatives of affected State, local and tribal governments, the nature of their concerns, copies of any written communications from the governments, and a statement supporting the need to issue the regulation. In addition, E.O. 12875 requires EPA to develop an effective process permitting elected officials and other representatives of State, local and tribal governments ''to provide meaningful and timely input in the development of regulatory proposals containing significant unfunded mandates.''

Today's rule does not create a mandate on State, local, or tribal governments. The rule does not impose any enforceable rules on any of these entities. This action does not create any new requirements but simply approves requirements that the State is already imposing. Accordingly, the requirements of section 1(a) of E.O. 12875 do not apply to this rule.

C. Executive Order 13045

Executive Order 13045, entitled ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997), applies to any rule that: (1) is determined to be ''economically significant'' as defined under E.O. 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

The EPA interprets E.O. 13045 as applying only to those regulatory actions that are based on health or safety risks, such that the analysis required under section 5–501 of the Order has the potential to influence the regulation. This final rule is not subject to E.O. 13045 because it approves a State program.

D. Executive Order 13084

Under E.O. 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. If EPA complies by consulting, E.O. 13084 requires EPA to provide to the OMB, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, E.O. 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments ''to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities.''

Today's rule does not significantly or uniquely affect the communities of Indian tribal governments. This action does not involve or impose any requirements that affect Indian tribes. Accordingly, the requirements of section 3(b) of E.O. 13084 do not apply to this rule.

E. Regulatory Flexibility Act

The Regulatory Flexibility Act, 5 U.S.C. 600 *et seq.*, generally requires an agency to conduct a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and small governmental jurisdictions. This final rule will not have a significant impact on a substantial number of small entities because approvals under section 111 of the Federal Clear Air Act (the Act) do not create any new requirements but simply approve requirements that the State is already imposing. Therefore, because the Federal SIP approval does not create any new requirements, I certify that this action will not have a significant economic impact on a substantial number of small entities. Moreover, due to the nature of the Federal-State relationship under the Act, preparation of a flexibility analysis would constitute Federal inquiry into the economic reasonableness of state action. The Act forbids EPA to base its actions concerning SIPs on such grounds. *See Union Electric Co.,* v. *U.S. EPA*, 427 U.S. 246, 255–66 (1976); 42 U.S.C. 7410(a)(2).

F. Unfunded Mandates

Under section 202 of the Unfunded Mandates Reform Act of 1995, signed into law on March 22, 1995, EPA must prepare a budgetary impact statement to accompany any proposed or final rule that includes a Federal mandate that may result in estimated annual costs to State, local, or tribal governments in the aggregate; or to private sector, of $100 million or more. Under section 205, EPA must select the most cost-effective and least burdensome alternative that achieves the objectives of the rule and is consistent with statutory requirements. Section 203 requires EPA to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted by the rule.

The EPA has determined that the approval action promulgated does not include a Federal mandate that may result in estimated annual costs of $100 million or more to either State, local, or tribal governments in the aggregate, or to the private sector. This Federal action approves pre-existing requirements under State or local law, and imposes no new requirements. Accordingly, no additional costs to State, local, or tribal governments, or to the private sector, result from this action.

G. Submission to Congress and the Comptroller General

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. The EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule can not take

effect until 60 days after it is published in the **Federal Register**. This action is not a ''major'' rule as defined by 5 U.S.C. 804(2). This rule will be effective August 16, 1999.

H. Petitions for Judicial Review

Under section 307(b)(1) of the Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by August 16, 1999. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this rule for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. *See* section 307(b)(2).

List of Subjects in 40 CFR Part 62

Environmental protection, Administrative practice and procedure, Air pollution control, Intergovernmental relations, Methane, Municipal solid waste landfills, Nonmethane organic compounds, Reporting and recordkeeping requirements.

Dated: June 7, 1999.

Gregg A. Cooke,

Regional Administrator, Region 6.

40 CFR part 62 is amended as follows:

PART 62—[AMENDED]

1. The authority citation for part 62 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

Subpart SS—Texas

2. Section 62.10850 is amended by adding paragraph (b)(3) to read as follows:

§ 62.10850 Identification of plan.

* * * * *

(b) * * *

(3) Control of landfill gas emissions from existing municipal solid waste landfills, submitted by the Governor on November 3, 1998.

* * * * *

3. Subpart SS is amended by adding a § 62.10880 and a new undesignated center heading to read as follows:

Landfill Gas Emissions From Existing Municipal Solid Waste Landfills

§ 62.10880 Identification of sources.

The plan applies to existing municipal solid waste landfills for which construction, reconstruction, or modification was commenced before May 30, 1991, that accepted waste at any time since October 8, 1993, or that have additional capacity available for future waste deposition, as described in 40 CFR part 60, subpart Cc.

[FR Doc. 99–15265 Filed 6–16–99; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 62

[LA–51–7413a; FRL–6360–8]

Approval and Promulgation of State Plans for Designated Facilities and Pollutants: Louisiana

AGENCY: Environmental Protection Agency (EPA).

ACTION: Direct final rule.

SUMMARY: We are approving the section 111(d) Plan submitted by the Louisiana Department of Environmental Quality (LDEQ) on December 30, 1998, to implement and enforce the Emissions Guidelines (EG) for existing Hospital/Medical/Infectious Waste Incinerators (MWI). The EG requires States to develop plans to reduce toxic air emissions from all MWIs. We are also approving a revision to the Louisiana State Plan as it pertains to existing municipal solid waste landfills. This revision adds certain increments of progress so that we can more effectively track facilities' progress towards compliance.

DATES: This direct final rule is effective on August 16, 1999, without further notice, unless we receive adverse comments by July 19, 1999. If EPA receives such comments, it will publish a timely withdrawal of the direct final rule in the **Federal Register** and inform the public that the rule will not take effect.

ADDRESSES: You should address comments on this action to Lt. Mick Cote, EPA Region 6, Air Planning Section (6PD–L), 1445 Ross Avenue, Suite 1200, Dallas, Texas 75202.

Copies of all materials considered in this rulemaking may be examined during normal business hours at the following locations: EPA Region 6 offices, 1445 Ross Avenue, Suite 700, Dallas, Texas 75202, and at the Louisiana Department of Environmental Quality offices, 7290 Bluebonnet Blvd., Baton Rouge, Louisiana 70884–2135.

FOR FURTHER INFORMATION CONTACT: Lt. Mick Cote at (214) 665–7219.

SUPPLEMENTARY INFORMATION:

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I. What Action Is Being Taken by EPA Today?

We are approving the Louisiana State Plan, as submitted on December 30, 1998, for the control of air emissions from MWIs, except for those MWIs located in Indian Country. When we developed our New Source Performance Standard (NSPS) for MWIs, we also developed EG to control air emissions from older MWIs. See 62 FR 48348–48391, September 15, 1997. The LDEQ developed a State Plan, as required by section 111(d) of the Clean Air Act (the Act), to adopt the EG into their body of regulations, and we are acting today to approve it.

We approved Louisiana's section 111(d) State plan for municipal solid waste landfills on August 29, 1997 (62 FR 45730). In accordance with our EG for this category of sources, LDEQ is allowed to develop increments of progress separately and submit them as a revision to the State Plan. Our detailed discussion of this requirements was discussed in 62 FR 45730.

1. Design plans are due on or before January 28, 1999;

2. Awarding of contracts is due on or before June 28, 1999;

3. Initiation of on-site construction is due on or before March 28, 2000;

4. Initial performance tests must be completed on or before March 28, 2000;

5. Final compliance must be met on or before April 28, 2000. These increments of progress satisfy the requirements of the EG for municipal solid waste landfills, and we are approving them today as a revision to the State Plan.

We are publishing this action without prior proposal because we view this as a noncontroversial amendment and anticipate no adverse comments. However, in a separate document in this **Federal Register** publication, we are proposing to approve the revision should significant, material, and adverse comments be filed. This action is effective August 16, 1999, unless by July 19, 1999, adverse or critical comments are received. If we receive such comments, this action will be withdrawn before the effective date by publishing a subsequent notice that will withdraw the final action. All public

APPENDIX C.6

Response to Public Comments

(Reserved until Adoption)