

# ENVIRONMENTAL PROTECTION AGENCY

## 40 CFR Part 62

[EPA-HQ-OAR-2019-0338; FRL-10022-82-OAR]

RIN 2060-AU52

### 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

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** In this action, the U.S. Environmental Protection Agency (EPA) is promulgating a Federal plan to implement the Emission Guidelines (EG) and Compliance Times for Municipal Solid Waste (MSW) Landfills (2016 MSW Landfills EG) for existing MSW landfills located in states and Indian country where state plans or tribal plans are not in effect. This MSW Landfills Federal Plan includes the same elements as required for a state plan: Identification of legal authority and mechanisms for implementation; inventory of designated facilities; emissions inventory; emission limits; compliance schedules; a process for the EPA or state review of design plans for site-specific gas collection and control systems (GCCS); testing, monitoring, reporting and record keeping requirements; and public hearing requirements. Additionally, this action summarizes implementation and delegation of authority of the MSW Landfills Federal Plan.

**DATES:** The final rule is effective on June 21, 2021. The incorporation by reference (IBR) of certain publications listed in the rule is approved by the Director of the Federal Register as of June 21, 2021.

**ADDRESSES:** The U.S. Environmental Protection Agency (EPA) has established a docket for this action under Docket ID No. EPA-HQ-OAR-2019-0338. All documents in the docket are listed on the <https://www.regulations.gov/> website. Although listed, some information is not publicly available, e.g., Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through <https://www.regulations.gov/> or in hard copy at

the EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue NW, Washington, DC. The EPA has temporarily suspended its Docket Center and Reading Room for public visitors to reduce the risk of transmitting COVID-19. Our Docket Center staff will continue to provide remote customer service via email, phone, and webform. The EPA continues to carefully and continuously monitor information from the Centers for Disease Control (CDC), local area health departments, and our Federal partners so that we can respond rapidly as conditions change regarding COVID-19. For further information on EPA Docket Center services and the current status, please visit us online at <https://www.epa.gov/dockets>.

**FOR FURTHER INFORMATION CONTACT:** For questions about this final action, contact Andrew Sheppard, Sector Policies and Programs Division (E143-03), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541-4161; fax number: (919) 541-0516; and email address: [sheppard.andrew@epa.gov](mailto:sheppard.andrew@epa.gov). For specific information regarding the implementation of this Federal plan, contact the appropriate EPA Regional office listed in Table 3 of this preamble.

#### SUPPLEMENTARY INFORMATION:

*Preamble acronyms and abbreviations.* We use multiple acronyms and terms in this preamble. While this list may not be exhaustive, to ease the reading of this preamble and for reference purposes, the EPA defines the following terms and acronyms here:

AG attorney general  
CAA Clean Air Act  
CDX Central Data Exchange  
CEDRI Compliance and Emissions Data Reporting Interface  
CFR Code of Federal Regulations  
CHIEF Clearinghouse for Inventories and Emissions Factors  
COVID-19 coronavirus disease of 2019  
EG emission guidelines  
EPA Environmental Protection Agency  
ERT Electronic Reporting Tool  
GCCS gas collection and control system  
IBR incorporation by reference  
LFG landfill gas  
m3 cubic meter  
Mg megagram  
MSW municipal solid waste  
NMOC nonmethane organic compounds  
NSPS new source performance standards  
NTTAA National Technology Transfer and Advancement Act  
OAQPS Office of Air Quality Planning and Standards  
OMB Office of Management and Budget  
ppm parts per million  
PRA Paperwork Reduction Act  
RFA Regulatory Flexible Act

RIN Regulatory Information Number  
SEM surface emissions monitoring  
UMRA Unfunded Mandate Reform Act  
U.S.C. United States Code

*Organization of this document.* The information in this preamble is organized as follows:

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- J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations
- K. Congressional Review Act (CRA)
- L. Clean Air Act Section 307(d)

## I. General Information

### A. Does this action apply to me?

This final action addresses existing MSW landfills and associated solid

waste management programs and promulgates regulations that were proposed on August 22, 2019 (84 FR 43745). For the purpose of this regulation, existing MSW landfills are those that accepted waste after November 8, 1987, and commenced construction on or before July 17, 2014. Table 1 of this preamble lists the associated regulated industrial source categories that are the subject of this final action. Table 1 of this preamble is not intended to be exhaustive, but rather

provides a guide for readers regarding the entities that this final action is likely to affect. To determine whether a source would be affected by this action, please examine the applicability criteria in 40 CFR 62.16711 being finalized here. Questions regarding the applicability of this final action to a particular entity should be directed to the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

TABLE 1—INDUSTRIAL SOURCE CATEGORIES AFFECTED BY THIS ACTION

Source category	Examples of potentially regulated entities	NAICS code <sup>1</sup>
Industry: Air and water resource and solid waste management	Solid waste landfills .....	924110
Industry: Refuse systems—solid waste landfills .....	Solid waste landfills .....	562212
State, local, and tribal government agencies .....	Administration of air and water resource and solid waste management programs.	924110

<sup>1</sup> North American Industry Classification System.

### B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this action is available on the internet. Following signature by the EPA Administrator, the EPA will post a copy of this final action at <https://www.epa.gov/stationary-sources-air-pollution/municipal-solid-waste-landfills-new-source-performance-standards>. Following publication in the **Federal Register**, the EPA will post the **Federal Register** version of this final action at this same website.

### C. Judicial Review

Under Clean Air Act (CAA) section 307(b)(1), judicial review of this final rule is available only by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit by July 20, 2021. Moreover, under section 307(b)(2) of the CAA, the requirements established by this final rule may not be challenged separately in any civil or criminal proceedings brought by the EPA to enforce these requirements. Section 307(d)(7)(B) of the CAA further provides that “[o]nly an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment (including any public hearing) may be raised during judicial review.” This section also provides a mechanism for the EPA to convene a proceeding for reconsideration, “[i]f the person raising an objection can demonstrate to the EPA that it was impracticable to raise such objection within [the period for public comment] or if the grounds for such

objection arose after the period for public comment, (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule.” Any person seeking to make such a demonstration should submit a Petition for Reconsideration to the Office of the Administrator, U.S. EPA, Room 3000, WJC South Building, 1200 Pennsylvania Ave. NW, Washington, DC 20460, with a copy to both the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section, and the Associate General Counsel for the Air and Radiation Law Office, Office of General Counsel (Mail Code 2344A), U.S. EPA, 1200 Pennsylvania Ave. NW, Washington, DC 20460.

## II. Background

### A. What is the regulatory development background and legal authority for this action?

Under authority of the CAA, the EPA has promulgated several regulations that apply to MSW landfills. In 1996, under CAA section 111, the EPA promulgated the original standards of performance for new MSW landfills (*i.e.*, new source performance standards or NSPS) at 40 CFR part 60, subpart WWW, and EG for existing MSW landfills at 40 CFR part 60, subpart Cc (61 FR 9905; March 12, 1996). The NSPS and EG are based on the Administrator’s determination that MSW landfills cause, or contribute significantly to, air pollution that may reasonably be anticipated to endanger public health or welfare. In 1999, the EPA promulgated a Federal plan under CAA section 111 to implement the 1996 EG for MSW landfills located in states

that did not have approved and effective state plans (40 CFR part 62, subpart GGG) (64 FR 60689, November 8, 1999). The Federal plan was necessary to implement the 1996 EG for MSW landfills located in states and Indian country where state plans or tribal plans were not in effect.

Beginning in 2014, the EPA reviewed the NSPS and EG based on changes in the landfill industry since the rules were first promulgated in 1996, including changes to the size and number of existing landfills, industry practices, and gas control methods and technologies. In August 2016, the EPA made several revisions to further reduce emissions of landfill gas (LFG) and its components and promulgated revised subparts for the MSW Landfills NSPS at 40 CFR part 60, subpart XXX, and the EG for existing MSW landfills at 40 CFR part 60, subpart Cf (81 FR 59276 and 59332, August 29, 2016).

### B. What is the purpose of this action?

The CAA regulations implementing the EG require states with existing MSW landfills subject to the EG to submit state plans to the EPA in order to implement and enforce the EG. State plans implementing the 2016 MSW Landfills EG were due on May 30, 2017.<sup>1</sup> For states that did not submit an

<sup>1</sup> May 30, 2017, was the original deadline for submission of state plans pursuant to subpart B when subpart Cf (40 CFR 60.30f(b) of this chapter) was promulgated on August 29, 2016. The EPA subsequently finalized a rulemaking (84 FR 44547) on August 26, 2019, to change the MSW Landfills state and federal plan timing requirements by incorporating revised state and federal plan timing requirements in the newly promulgated subpart Ba (84 FR 32520, July 8, 2019), which had the effect

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approvable plan by that deadline, CAA section 111 and 40 CFR 60.27(c) and (d) require the EPA to develop, implement, and enforce a Federal plan for existing MSW landfills located in any state (*i.e.*, state, territory, or protectorate) or Indian country that does not have an approved state plan<sup>2</sup> that implements the 2016 MSW Landfills EG. On August 22, 2019, the EPA proposed a Federal plan under CAA section 111 to implement the 2016 EG for MSW landfills located in states that did not have approved and effective state plans (40 CFR part 62, subpart OOO) (84 FR 43745, August 22, 2019). On February 29, 2020, the EPA found 42 states and territories failed to submit state plans for the 2016 MSW Landfills EG (85 FR 14474, February 29, 2020), and as a result, this final action establishes an MSW Landfills Federal Plan to implement the 2016 MSW Landfills EG for those states that do not presently have an approved state plan.

For the purposes of this preamble and the MSW Landfills Federal Plan, the word “state” means any of the 50 United States, local agencies that have been delegated implementation and enforcement authority within those states, and the protectorates of the United States. The word “protectorate” means American Samoa, the Commonwealth of Puerto Rico, the District of Columbia, Guam, the Northern Mariana Islands, and the Virgin Islands.

C. What is a negative declaration letter?

A negative declaration is a letter to the EPA declaring either that there are no existing MSW landfills in the state or portion of Indian country at all or that there are no existing MSW landfills in the state or portion of Indian country that must install collection and control systems according to the requirements of the 2016 MSW Landfills EG. States or Indian tribes that submit negative declarations are not expected to submit state or tribal plans. Accordingly, because states and Indian tribes with approved negative declarations do not have approved state or tribal plans, existing MSW landfills with a design

capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m<sup>3</sup>) in the state or portion of Indian country are considered to be subject to the MSW Landfills Federal Plan. Existing MSW landfills with a design capacity less than 2.5 million Mg or 2.5 million m<sup>3</sup> that are located in states or portion of Indian country that submitted a negative declaration are not required to submit an initial design capacity report if the negative declaration letter includes the design capacity for the landfills. Such MSW landfills, however, continue to be subject to the requirements in the definition of design capacity in 40 CFR 62.16730 to recalculate the site-specific density annually and in 40 CFR 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 Mg and 2.5 million m<sup>3</sup>, as clarified in 40 CFR 62.16711(c).

D. What is the status of state plan submittals?

Before proposal of this Federal plan on August 22, 2019, the EPA had received 8 state plan submittals to implement the 2016 MSW Landfills EG, which included submittals from the following: Arizona (one plan covering Maricopa County, one covering Pinal County, and another covering the remainder of the state excluding Pima county), California, Delaware, New Mexico (one plan covering Albuquerque-Bernalillo County and another covering the remainder of the state), and West Virginia. The EPA has reviewed and fully approved six of these state plans that were submitted. The EPA also partially approved and partially disapproved the California state plan. See the memorandum, *Approved State Plans Implementing the 2016 MSW Landfills Emission Guidelines*, which is available in the docket for this action. The plan from Maricopa County, Arizona, was withdrawn on July 3, 2019. The EPA subsequently received and approved negative declarations from three

additional states (Maine, Rhode Island, and Vermont) and two local authorities (Washington, DC and Philadelphia, Pennsylvania) as well as three state plans (Oregon, South Dakota and Virginia). The EPA is not aware of any tribes that have developed plans to implement the 2016 MSW Landfills EG or submitted negative declarations. For all other locations, the EPA is establishing this MSW Landfills Federal Plan to implement the 2016 MSW Landfills EG in states and Indian country that do not yet have an approved and effective state or tribal plan.

The California state plan was partially disapproved because it does not fully meet certain provisions of the 2016 MSW Landfills EG. The California state plan omitted certain operational, monitoring, recordkeeping, and corrective action requirements related to temperature and/or oxygen or nitrogen levels. Therefore, in accordance with 40 CFR 60.27(c), the EPA is revising 40 CFR part 62, subpart F to identify the provisions of the Federal plan corresponding to the omitted requirements (40 CFR 60.34f(c), 60.36f(a)(5), 60.37f(a)(2) and (3), 60.38f(k), and 60.39f(e)(2) and (5)) that existing MSW landfills in California must implement in addition to the approved portion of the California plan. That update is described in section V of this preamble.

As of March 23, 2021, two more states (New York, Florida) have submitted state plans for review. The MSW landfills covered by the state plans submitted to date will not be subject to the MSW Landfills Federal Plan once the state plan that includes those MSW landfills has been approved and becomes effective. However, MSW landfills located in those states would remain subject to the Federal plan (or portions of the Federal plan) in the event that the state plan is subsequently disapproved, in whole or in part. Table 2 of this preamble summarizes the status of state plans and negative declarations as of February 5, 2021.

TABLE 2—STATUS OF STATE PLANS

Status	States
I. EPA-Approved State Plans .....	Arizona (one plan covering Pinal County and another covering the state); <sup>1</sup> California (partial approval, partial disapproval); Delaware; New Mexico (one plan covering Albuquerque-Bernalillo County and another covering the state); Oregon; South Dakota; Virginia; and West Virginia.

of extending the deadline for state plan submissions for subpart Cf. The timing requirements in subpart Ba were subsequently vacated by *American Lung Ass’n v. EPA*, 985 F.3d 914, 991–95 (D.C. Cir. 2021) (ALA). In light of the ALA decision, The EPA has

moved for voluntary vacatur of the subsequent landfills rulemaking. See *Environmental Defense Fund v. EPA*, No. 19–1222 (D.C. Circuit). As a result, the original timelines in subpart B would apply again to the landfills plans.

<sup>2</sup> An approved state plan is a plan developed by a state that the EPA has reviewed and approved based on the requirements in 40 CFR part 60, subparts B or Ba, as applicable, to implement 40 CFR part 60, subpart Cf.

TABLE 2—STATUS OF STATE PLANS—Continued

Status	States
II. Negative Declarations Approved by the EPA	Maine; Rhode Island; Vermont; Washington, DC; Philadelphia, Pennsylvania.
III. Final State Plans and Negative Declarations Submitted to the EPA.	Florida; New York.
IV. EPA Has Not Received a Final State Plan or Negative Declaration.	Alabama; Alaska; Arkansas; Colorado; Connecticut; Georgia; Hawaii; Idaho; Illinois; Indiana; Iowa; Kansas; Kentucky; Louisiana; Maryland; Massachusetts; Michigan; Minnesota; Mississippi; Missouri; Montana; Nebraska; Nevada; New Hampshire; New Jersey; North Carolina; North Dakota; Ohio; Oklahoma; Pennsylvania; Puerto Rico; South Carolina; Tennessee; Texas; Utah; Virgin Islands; Washington; Wisconsin; Wyoming.

<sup>1</sup> The Arizona state plan does not cover Maricopa or Pima counties.

As the EPA Regional offices approve state plans subsequent to the issuance of the Federal plan, they will also, in the same action, amend the appropriate subpart of 40 CFR part 62 to codify their

approvals. MSW landfill owners or operators can also contact the EPA Regional office for the state in which their MSW landfill is located to determine whether there is an approved

and effective state plan in place. Table 3 of this preamble lists the addresses for the EPA Regional offices and the states that they cover.

TABLE 3—EPA REGIONAL OFFICES

Region	Address	States and territories
Region I .....	5 Post Office Square—Suite 100, Boston, MA 02109–3912 ....	Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, Vermont.
Region II .....	290 Broadway, New York, NY 10007–1866 .....	New York, New Jersey, Puerto Rico, Virgin Islands.
Region III .....	Air Protection Division, Mail Code 3AP00, 1650 Arch Street, Philadelphia, PA 19103–1129.	Virginia, Delaware, District of Columbia, Maryland, Pennsylvania, West Virginia.
Region IV .....	61 Forsyth Street SW, Atlanta, GA 30303–3104 .....	Florida, Georgia, North Carolina, Alabama, Kentucky, Mississippi, South Carolina, Tennessee.
Region V .....	Mail Code A–17J, 77 West Jackson Blvd., Chicago, IL 60604–3590.	Minnesota, Wisconsin, Illinois, Indiana, Michigan, Ohio.
Region VI .....	1201 Elm Street, Suite 500, Dallas, TX 75270–2102 .....	Arkansas, Louisiana, New Mexico, Oklahoma, Texas.
Region VII .....	Air and Waste Management Division, 11201 Renner Boulevard, Lenexa, Kansas 66219.	Iowa, Kansas, Missouri, Nebraska.
Region VIII .....	Director, Air Program, Office of Partnerships and Regulatory Assistance, Mail Code 8P–AR, 1595 Wynkoop Street, Denver, CO 80202–1129.	Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming.
Region IX .....	75 Hawthorne Street, San Francisco, CA 94105 .....	Arizona, California, Hawaii, Nevada, American Samoa, Guam, Northern Mariana Islands.
Region X .....	1200 6th Avenue, Suite 155, Seattle, WA 98101 .....	Washington, Alaska, Idaho, Oregon.

#### E. What are the elements of the MSW Landfills Federal Plan?

Section 111(d) of the CAA, as amended, 42 U.S.C. 7411(d), requires states to develop and implement state plans for MSW landfills to implement and enforce the promulgated EG. Accordingly, 40 CFR part 60, subpart Cf requires states to submit state plans that include specified elements. Because this Federal plan takes the place of state plans, where state plans are not fully approved and effective, it includes the same essential elements: (1) Identification of legal authority and mechanisms for implementation; (2) inventory of designated facilities; (3) inventory of emissions; (4) emission limits; (5) compliance schedules; (6) process for the EPA or state review of site-specific design plans for GCCS; (7) testing, monitoring, reporting, and recordkeeping requirements; and (8) public hearing requirements. Each element was discussed in detail as it

relates to the Federal plan in section IV of the preamble of the proposed rule (84 FR 43745, August 22, 2019).

#### III. What are the designated facilities?

##### A. What is a designated MSW landfill?

The designated facility for the MSW Landfills Federal Plan is each MSW landfill that (1) commenced construction, reconstruction, or modification prior to July 17, 2014, and has not been modified or reconstructed since then, and (2) has accepted waste since November 8, 1987, or has capacity for future waste deposition, which also includes MSW landfills that were subject to 40 CFR part 62, subpart GGG or 40 CFR part 60, subpart WWW.

If an existing MSW landfill subject to the Federal plan increases its permitted volume design capacity through vertical or horizontal expansion (*i.e.*, is modified) on or after July 17, 2014, it would be subject to the MSW Landfills NSPS (40 CFR part 60, subpart XXX)

(see 81 FR 59332, August 29, 2016) and would no longer be subject to the Federal plan. An existing MSW landfill that makes operational changes without increasing the horizontal or vertical dimensions of the landfill would continue to be subject to the Federal or approved state plan that implements the 2016 MSW Landfills EG, rather than the NSPS.

##### B. How do I determine if my MSW landfill is covered by an approved and effective state plan?

The status of approval and promulgation of CAA section 111(d) state plans for designated sources in each state or territory is identified in 40 CFR part 62. However, 40 CFR part 62 is only updated periodically. Thus, if 40 CFR part 62 does not indicate that a state has an approved and effective plan, please contact the appropriate EPA Regional office (see Table 3 in section II.D of this preamble) to determine if approval has occurred

since publication of the most recent version of 40 CFR part 62. Each state plan becomes effective 30 days after the final EPA approval of the state plan is published in the **Federal Register**.

This final action does not preclude states from submitting a state plan later. If a state submits a plan after the promulgation date of the MSW Landfills Federal Plan, the EPA will review and approve or disapprove the state plan. If the EPA approves a plan, then the MSW Landfills Federal Plan no longer applies to MSW landfills covered by the state plan. If an MSW landfill is overlooked by a state that has an approved negative declaration, or if an individual MSW landfill is not covered by an approved and effective state plan, the MSW landfill will remain subject to this Federal plan.

#### IV. Summary of Changes Since Proposal and Response to Comments

This section summarizes all changes made to the Federal plan since proposal, in part, in response to public comments. The changes include clarifications regarding initial reporting requirements and timing of GCCS for landfills that have previously submitted a GCCS design plan for other MSW landfill Federal regulations, clarifications on LFG treatment system monitoring plan requirements, and the updated inventory of designated facilities and their emissions. The EPA received six comment letters on the proposed MSW Landfills Federal Plan. Certain comments and responses are contained in this section that are relevant to the EPA's clarification of requirements.<sup>3</sup> For more information, see the response to comments document, titled *Summary of Public Comments and EPA's Responses for the Proposed 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*, which is available in the docket for this action.

##### A. Clarification of Requirements

###### 1. Legacy Controlled Landfills

**Comment:** Two commenters requested that the EPA clarify the compliance timelines and requirements for plan submittals to address existing MSW landfills that have already installed a GCCS. Specifically, one commenter requested that the EPA clarify which of

the initial plans and reports are required for existing landfills that already submitted such initial reports under the subpart WWW NSPS. The other commenter suggested that landfills that have already installed a GCCS should not be subject to the second and third increments of progress, since awarding contracts and initiating on-site construction may have already occurred. The commenter said that such landfills would still be subject to the requirement to fully comply with all aspects of the Federal plan as of the 30-month deadline.

**Response:** The EPA agrees that additional clarification is needed regarding several compliance obligations for landfills that are already controlling emissions under previous Federal regulations. Although EPA anticipated that additional landfills would require controls as a result of the revised regulations at 40 CFR part 60, subpart Cf, EPA's intent was that, if a landfill was already classified as a "controlled landfill," the 30-month period to install and operate a GCCS cannot be reset or restarted. Therefore, the EPA is clarifying its intent in the regulatory provisions for the timing of compliance with certain requirements for landfills that were considered to be a controlled landfill under 40 CFR part 60, subpart WWW; 40 CFR part 62, subpart GGG; or a state plan implementing 40 CFR part 60, subpart Cc, as discussed in the remainder of this response.

The NSPS at 40 CFR part 60, subpart WWW, identified and defined the term "controlled landfill" as one that had triggered the nonmethane organic compounds (NMOC) threshold of 50 Mg per year or more and submitted its collection and control system design plan. The provisions of 40 CFR part 60, subpart WWW, require the design plan to be submitted within 1 year of the first NMOC annual emission rate report that is equal to or greater than 50 Mg per year NMOC. The EG at 40 CFR part 60, subpart Cc, and the Federal plan at 40 CFR part 62, subpart GGG, do not define the term "controlled landfill" directly but note that the definition of terms used but not defined in those subparts has the meaning given them in the CAA and in 40 CFR part 60, subparts A, B, and WWW. These rules provide the same timing allowance of 1 year after the NMOC report showing emissions of 50 Mg NMOC per year or more to submit the collection and control system design plan. These landfills have already met requirements under existing 40 CFR part 60 or part 62 regulations, and the EPA emphasizes that there is no need to duplicate those efforts when

complying with the Federal plan being finalized in this action. The EPA has added a definition of the term "legacy controlled landfill" to 40 CFR 62.16730 to clarify requirements and compliance times for these landfills.

Legacy controlled landfills have previously satisfied the requirement to submit their initial design capacity report, initial or annual NMOC emission rate reports, and collection and control system design plan. These reports were previously 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. The EPA has clarified that it is not requiring these sources to resubmit any of these reports under 40 CFR 62.16711(h).

Additionally, because annual NMOC reports have been previously 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, some of the legacy controlled landfills have already passed the 30-month period after the first NMOC report that showed emissions of 50 Mg NMOC per year or more. Other legacy controlled landfills may not reach the end of the 30-month period until after this Federal plan becomes effective. The EPA has revised some of the increments of progress at 40 CFR 62.16712 to account for landfills that have already achieved some or all of the increments of progress. The EPA has also revised 40 CFR 62.16711(h), 62.16714(b)(2), 62.16724, and Table 1 of 40 CFR part 62, subpart OOO to more clearly define the requirements for these legacy controlled landfills.

In this action, the EPA is also clarifying that legacy controlled landfills will continue to install and expand their GCCS under the Federal plan at the same schedule required by the previous landfill rules. That is, the owner or operator must expand the GCCS every 5 years if in active areas, or every 2 years if the area is closed or at final grade. Similar to our intent that the 30-month period not be stopped or restarted with the promulgation of this Federal plan, the timeframe for GCCS expansions will continue without break as a landfill transitions from one of the previous regulations into this Federal plan.

Legacy controlled landfills have until the effective date of this regulation June 21, 2021 to demonstrate compliance with the GCCS operational standards and the monitoring, reporting, and recordkeeping requirements outlined in the Federal plan. The MSW Landfills Federal Plan implements the 2016 MSW Landfills EG, which included some

<sup>3</sup> Copies of all comments submitted are available at the EPA Docket Center Public Reading Room and are also available electronically through <https://www.regulations.gov/> by searching Docket ID No. EPA-HQ-OAR-2019-0338.

changes to the GCCS operational standards, and associated monitoring, recordkeeping, and reporting requirements from the original NSPS and EG regulations. The MSW Landfills EG was published in August 2016, over 3 years prior to the publication of the proposed Federal plan. Additionally, many of these requirements have provided additional operational flexibility to landfills, such as the removal of the oxygen/nitrogen operational standard at wellheads, the option to meet some of the GCCS removal criteria by demonstrating that the control system cannot operate for 15 years, new optional Tier 4 surface-emissions-based provisions, and the ability to use actual gas flow data instead of modeled emissions for excluding non-productive areas of the landfill from control. Prior to compliance with the new requirements, owners or operators of legacy controlled landfills must continue to operate the GCCS and monitor, report, and keep records in accordance with the requirements in 40 CFR part 60, subpart WWW; 40 CFR part 62, subpart GGG; or a state plan implementing 40 CFR part 60, subpart Cc, depending on which regulation applies to the landfill before this Federal plan becomes effective.

The EPA also acknowledges that some of the legacy controlled landfills have already conducted initial performance tests or submitted initial annual reports under the previous regulations. The EPA is exempting legacy controlled landfills from the requirement to redo any initial performance tests that were previously 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. However, if legacy controlled landfills add additional flares or any other additional control equipment after this Federal plan becomes effective, those test results must be submitted to EPA's Central Data Exchange (CDX) and included in future annual reports. Similarly, the EPA is clarifying the timing of the initial annual report for legacy controlled landfills that have already submitted an initial report under previous landfill regulations. The EPA is clarifying in 40 CFR 62.16724(h) that legacy controlled landfills continue the annual frequency for reporting by allowing submittal 1 year after the report was submitted under the previous regulations. The contents of the annual reports submitted after this Federal plan becomes effective must reflect the requirements listed in 40 CFR 62.16724(h). For example, if a landfill submitted its last annual report under

40 CFR part 60, subpart WWW, in January 2021, the annual report under 40 CFR part 62, subpart OOO, will be due in January 2022 (1 year after the latest report) and submitted to CDX.

The EPA also acknowledges some clarifications are necessary regarding the timing of treatment system monitoring plans for legacy controlled landfills that were treating LFG for subsequent sale or beneficial reuse before the effective date of the Federal plan. In the 2016 MSW Landfills EG, the EPA finalized a new requirement to prepare a treatment system monitoring plan (40 CFR 60.39f(b)(5)). This plan was required to be submitted as part of the landfill's title V application and the plan would be reviewed as part of the general permitting process. Because legacy controlled landfills may not have already submitted this plan under the 5-year title V renewal timeline, we have clarified in 40 CFR 62.16724(d)(7) that legacy controlled landfills have up to May 23, 2022, to develop or update this plan. See EPA's Response to Comments document for the 2016 MSW Landfills EG (Docket ID Item No. EPA-HQ-OAR-2014-0451-0229, section 11.7). Landfills that are treating LFG are anticipated to already have documentation in place for LFG treatment specifications that are related to contractual agreements or operational procedures. Therefore, the EPA has determined that 1 year is sufficient time to complete this requirement under the Federal plan.

## 2. Closed Landfills and the Closed Landfill Subcategory

The EPA is clarifying the compliance obligation requirements for closed landfills, although these clarifications did not lead to a change in the regulatory text. The 2016 MSW Landfills EG established a closed landfill subcategory for landfills that closed on or before September 27, 2017. For landfills that meet the criteria of the closed landfill subcategory, the EPA is finalizing, as proposed, the exemption from submitting an initial or most recent NMOC emission rate report provided that the report showed emissions below 50 Mg per year, which is the emission threshold for this subcategory (see 40 CFR 62.16711(g)(2)). However, for landfills that have closed since September 28, 2017, the EPA is requiring an initial NMOC emission rate report in order to assess whether the landfill exceeds the lower threshold of 34 Mg per year and must install a GCCS (see 40 CFR 62.16714(e)). Because the emission rate threshold has been reduced, this initial report is necessary in order to establish the timeline and

applicability for control requirements. After the initial NMOC report, subsequent annual reports are not required for closed landfills, as stated in 40 CFR 62.16714(e)(1)(ii). Similarly, landfills that had already installed a GCCS under 40 CFR part 60, subpart WWW; 40 CFR part 62, subpart GGG; or a state plan implementing 40 CFR part 60, subpart Cc and have closed since September 28, 2017, do not need to submit an initial NMOC report and are not required to submit subsequent annual reports (see 40 CFR 62.16714(e)(1)(ii)).

## 3. Other Technical Corrections and Clarifications

The EPA is making several technical corrections in this final action that were identified during the public comment process in order to improve the clarity of the rule. Two commenters noted that a typo appeared in 40 CFR 62.16711(a)(1), where "July 14, 2014" appeared instead of the correct date, "July 17, 2014." The EPA has corrected this typographical error in the final regulation. One commenter pointed out that 40 CFR 62.16712(a) instructed readers to refer to 40 CFR 62.16730 for a definition of each increment of progress, however, the section did not contain these definitions. The EPA agrees with this missing reference and has added definitions to 40 CFR 62.16730 for nine terms: "Achieve final compliance," "Award contract," "Complete on-site construction," "EPA approved state plan," "Final control plan (Collection and control system design plan)," "Indian Country," "Initiate on-site construction," "Negative declaration letter," and "Tribal plan." These definitions are consistent with the terms as defined in 40 CFR part 62, subpart GGG, and include modifications specific to the requirements of this MSW Landfills Federal Plan. The same commenter further noted that 40 CFR 62.16712(c) referred to Table 2 in subpart OOO for site-specific compliance schedules, though there is no Table 2 included in subpart OOO. The EPA has not received any requests for site-specific compliance schedules, and we are therefore not including a Table 2 in the final rule. As such, the EPA has removed any reference to Table 2 from the regulatory text. Additionally, the EPA has corrected the citations in the regulatory text to refer to 40 CFR 62.16710–62.16730 instead of 40 CFR 62.710–62.730.

### B. Inventory of Designated MSW Landfills

The docket for this action includes an inventory of the MSW landfills that are covered by this MSW Landfills Federal Plan in the absence of approved state or tribal plans. The inventory of designated facilities and their corresponding emissions are elements of a Federal plan, as discussed in section II.E of this preamble. At proposal, the EPA developed an initial inventory of landfills and emissions by identifying existing landfills that were expected to be covered by the proposed Federal plan (Docket ID Item No. EPA-HQ-OAR-2019-0338-0006) and requested that states or owners or operators identify additional sources for inclusion on the list. During the comment period, the EPA received one comment that provided edits to the source inventory for MSW landfills in Oklahoma. The commenter provided updated information about three landfills in the draft source inventory and provided a list of 11 landfills that accepted waste after November 8, 1987, that were missing from the draft inventory. A complete list of the additional landfills can be found in the comment letter (Docket ID Item No. EPA-HQ-OAR-2019-0338-0012). In addition to adjusting the inventory based on public comments, the EPA reviewed and approved several state plans since proposal, as listed in section II.D of this preamble. Therefore, the EPA has also adjusted the inventory to remove any landfills for which EPA has signed an approval (full or partial) for the state plan, regardless of whether or not it has been published in the **Federal Register** and become effective. Since the approvals were submitted to the **Federal Register** before this rule, it is expected that the previously-approved state plans will be effective before the effective date of the MSW Landfills Federal Plan.

As of February 2021, there are an estimated 1,590 landfills covered by this final Federal plan. These landfills exist in 42 states and the U.S. territories of Puerto Rico and the Virgin Islands. Additionally, one tribal entity, the Salt River Pima Maricopa Indian Community, is covered by this final Federal plan. For a discussion of the sources, their locations, and information used to develop the source list, see the memorandum, *Developing a Federal Plan Source and Emission Inventory-Final Rule, February 2021*, which is available in the docket for this action. In addition to this list, any MSW landfill that meets the applicability criteria in this action is subject to the Federal plan, regardless of whether it is listed in the

final inventory included in *Developing a Federal Plan Source and Emission Inventory-Final Rule, February 2021*.

### C. Inventory of Emissions

As a required element of this Federal plan, the docket contains an inventory of emissions from the MSW landfills that are covered by this final Federal plan. The EPA estimated the emissions from the inventory of existing MSW landfills that are expected to be covered by the Federal plan as of February 5, 2021. Pollutant emissions are expressed in Mg NMOC per year in calendar year 2021. Table 4 of this preamble summarizes the results of the inventory.

These estimates are based solely on the modeled emissions remaining after considering controls required by 40 CFR part 60, subparts WWW and Cc, and do not include any additional emissions reductions from voluntary actions, such as early installation of the GCCS. See the memorandum, *Developing a Federal Plan Source and Emission Inventory-Final Rule, February 2021*, which is available in the docket for this action, for the complete emissions inventory, including detailed emissions from MSW landfills in each state, and details on the calculations used to determine those emissions.

TABLE 4—SUMMARY OF ESTIMATED NMOC EMISSIONS FROM EXISTING MSW LANDFILLS EXPECTED TO BE COVERED BY THE FEDERAL PLAN

Region/state	2021 NMOC emissions (Mg per year)
Region 1:	
Connecticut .....	13
Massachusetts .....	391
New Hampshire .....	74
Region 2:	
New Jersey .....	318
New York .....	833
Puerto Rico .....	268
Virgin Islands .....	13
Region 3:	
Maryland .....	412
Pennsylvania .....	1,391
Region 4:	
Alabama .....	424
Florida .....	1,121
Georgia .....	1,082
Kentucky .....	519
Mississippi .....	205
North Carolina .....	934
South Carolina .....	440
Tennessee .....	816
Region 5:	
Illinois .....	1,301
Indiana .....	767
Michigan .....	1,164
Minnesota .....	258
Ohio .....	1,189
Wisconsin .....	513
Region 6:	

TABLE 4—SUMMARY OF ESTIMATED NMOC EMISSIONS FROM EXISTING MSW LANDFILLS EXPECTED TO BE COVERED BY THE FEDERAL PLAN—Continued

Region/state	2021 NMOC emissions (Mg per year)
Arkansas .....	319
Louisiana .....	587
Oklahoma .....	318
Texas .....	2,030
Region 7:	
Iowa .....	358
Kansas .....	330
Missouri .....	427
Nebraska .....	279
Region 8:	
Colorado .....	772
Montana .....	93
North Dakota .....	50
Utah .....	298
Wyoming .....	48
Region 9:	
Arizona * .....	377
Hawaii .....	112
Nevada .....	75
Region 10:	
Alaska .....	91
Idaho .....	113
Washington .....	388

\* Arizona includes estimates for 18 landfills in Maricopa and Pima counties only.

### V. Summary of Final MSW Landfills Federal Plan Requirements

#### A. What are the final applicability requirements?

The Federal plan applicability criteria (40 CFR 62.16711) reflect those established by the 2016 MSW Landfills EG (40 CFR 60.31f). The designated facility for this MSW Landfills Federal Plan is described in section III.A of this preamble and this action establishes an MSW Landfills Federal Plan to implement the 2016 MSW Landfills EG for designated facilities located in states and tribal countries without an approved state plan.

The EPA partially approved and partially disapproved the California state plan because the plan omitted certain required provisions. Thus, for MSW landfills that are affected by the California state plan, the EPA is updating 40 CFR part 62, subpart F (40 CFR 62.1115(b)(2)) to identify the provisions of the Federal plan corresponding to the omitted requirements that existing MSW landfills in California must implement in addition to the approved portion of the California plan: 40 CFR 62.16716(c) wellhead operational standards (corresponding to 40 CFR 60.34f(c)), 62.16720(a)(5) wellhead monitoring (corresponding to 40 CFR 60.36f(a)(5)),



62.16722(a)(2) and (3) wellhead monitoring (corresponding to 40 CFR 60.37f(a)(2) and (3)), 62.16724(k) corrective action (corresponding to 40 CFR 60.38f(k)), and 62.16726(e)(2) and (5) recordkeeping (corresponding to 40 CFR 60.39f(e)(2) and (5)).

*B. What are the final compliance schedules?*

Unless the landfill is a legacy controlled landfill, owners or operators of MSW landfills subject to the MSW Landfills Federal Plan are required to submit a design capacity report within 90 days after the effective date of the Federal plan (40 CFR 62.16724(a)). If the design capacity report indicates a capacity equal to or greater than 2.5 million Mg and 2.5 million m<sup>3</sup> of solid waste a landfill can accept, an annual NMOC emission rate report must also be submitted within 90 days after the effective date of the Federal plan and then every 12 months until the landfill installs a GCCS (40 CFR 62.16724(c)). As discussed in section IV.A of this preamble, legacy controlled landfills have satisfied the requirement to submit their initial design capacity report and NMOC emission rate report with their initial reports previously 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.

If the first NMOC emission rate report submitted under the MSW Landfills Federal Plan shows emissions less than 34 Mg per year NMOC (50 Mg per year for the closed landfill subcategory), then the owner or operator must recalculate NMOC emissions annually and submit annual NMOC emission rate reports unless the MSW landfill is closed. (See 40 CFR 62.16724(c)(3) for conditions under which 5-year reports rather than annual reports may be submitted.)

If an emission rate report shows that NMOC emissions equal or exceed 34 Mg per year, the owner or operator must begin following enforceable increments of progress to install and operate a GCCS within 30 months after the date the first annual NMOC Emission Rate Report shows NMOC reaching or exceeding 34 Mg per year NMOC (40 CFR 62.16712). Therefore, the generic schedule for the increments of progress starts with the date of the first annual emission rate report that shows NMOC emissions equal or exceed 34 Mg per year (40 CFR 62.16712(c)). Alternatively, a landfill may follow Tier 4 as discussed later in this section (40 CFR 62.16718(a)(6)). Legacy controlled landfills have 30 months from when they submitted an NMOC emission rate report that showed emissions of 50 Mg

per year or greater under 40 CFR part 60, subpart WWW; 40 CFR part 62, subpart GGG; or a state plan implementing 40 CFR part 60, subpart Cc to demonstrate compliance with the increments of progress to install a GCCS. All designated facilities with a design capacity equal to or greater than 2.5 million Mg and 2.5 million m<sup>3</sup> are required to submit subsequent NMOC emission rate reports until the collection and control system begins operating in accordance with 40 CFR 62.16716.

Increments of progress are required only for requirements with compliance deadlines exceeding 1 year. Therefore, the 30-month compliance timeline only applies to installations of GCCS for those sources newly subject to these requirements because of the revision to the NMOC emissions threshold. Otherwise, all designated facilities must comply with all applicable standards and monitoring, recordkeeping, and reporting requirements as of the effective date of this rule June 21, 2021. For example, landfills must monitor all cover penetrations and keep records of locational data (longitude and latitude coordinates) of each monitored exceedance during quarterly surface emissions monitoring (SEM) as of the effective date of this rule. Additionally, certain reports are required to be submitted electronically after the effective date of this rule.

This MSW Landfills Federal Plan includes the five increments of progress required by 40 CFR 60.24(e)(1) and provides flexibility to establish the increment dates (40 CFR 62.16712). The MSW Landfills Federal Plan contains a generic compliance schedule (Table 1 to 40 CFR part 62, subpart OOO) that applies to designated MSW landfills unless the EPA approves an alternative schedule according to the criteria in 40 CFR 60.27(e)(2). Legacy controlled landfills have already satisfied, at a minimum, the first increment of progress under their previous rule. Depending on where the landfill is in the construction and operation phase of its GCCS, they may have already satisfied all five increments of progress. If a landfill has not yet reached increment 5 (achieve final compliance), it must demonstrate compliance with any remaining increments of progress on this schedule. However, the landfill must use the date of its first NMOC emission rate 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 Mg to calculate deadlines for remaining increments not yet met. The landfill may not resubmit a new

emission rate report to restart the timeline for meeting each increment of progress.

The five mandatory increments of progress are as follows:

1. Submit final control plan (design plan)—12 months after the first annual emission rate report showing NMOC emissions  $\geq 34$  Mg per year ( $\geq 50$  Mg per year for the closed landfill subcategory).
  2. Award contracts for control systems or orders for purchase of components—20 months after the first annual emission rate report showing NMOC emissions  $\geq 34$  Mg per year ( $\geq 50$  Mg per year for the closed landfill subcategory).
  3. Begin on-site construction or installation of the GCCS—24 months after the first annual emission rate report showing NMOC emissions  $\geq 34$  Mg per year ( $\geq 50$  Mg per year for the closed landfill subcategory).
  4. Complete on-site construction or installation of the GCCS—30 months after the first annual emission rate report showing NMOC emissions  $\geq 34$  Mg per year ( $\geq 50$  Mg per year for the closed landfill subcategory).
  5. Achieve final compliance—30 months after the first annual emission rate report showing NMOC emissions  $\geq 34$  Mg per year ( $\geq 50$  Mg per year for the closed landfill subcategory). Note that the initial performance test to demonstrate compliance must be conducted within 180 days after the date the landfill 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; 40 CFR part 62, subpart GGG; 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.
- The compliance deadline for the first, fourth, and fifth increments is established in the 2016 MSW Landfill EG. The EPA selected the deadlines for the second and third increments to match the lengths of time for these increments that was included in the previous Federal plan for MSW landfills and to allow a reasonable period of time for MSW landfills to: Complete these activities, have the regulatory agency review and approve the design plan, solicit bids, and award contracts within the overall implementation schedule. According to 40 CFR 60.27(e)(1), Federal plan compliance times may be no less stringent than those established in the EG. The EPA will accept facility-specific compliance schedules from MSW landfill owners or operators, as allowed under 40 CFR 60.27(e)(2). However, owners or operators using alternate dates for increments 2 and 3



must continue to meet the required dates for increments 1, 4, and 5.

Owners or operators employing Tier 4 would follow the generic compliance schedule for Tier 4 landfills in Table 1 to 40 CFR part 62, subpart OOO. Increment 1 is triggered by the first measured concentration of methane of 500 parts per million (ppm) or greater, rather than the initial NMOC emission rate report showing NMOC emissions 34 Mg per year or greater. Landfills employing Tier 4 would continue to submit an annual NMOC emission rate report (40 CFR 62.16724(c)). Timing of increments 2 through 5 for Tier 4 landfills are based on the *most recent* NMOC emission rate report showing NMOC emissions rate of 34 Mg per year or greater.

#### *C. What are the final emissions limits and operating limits?*

The EPA requires that an MSW landfill subject to the Federal plan must install and operate a GCCS that meets specified emissions and operating limits (40 CFR 62.16714 and 40 CFR 62.16716), if the NMOC emissions rate is 34 Mg per year or more (50 Mg per year or more for the closed landfill subcategory). The standards require owners or operators to operate the GCCS at a negative pressure at each wellhead (except during certain specified conditions), operate the interior wellhead at a temperature less than 55 degrees Celsius (131 degrees Fahrenheit), and operate the collection system so that the methane concentration is less than 500 ppm above background at the surface of the landfill (40 CFR 62.16716(b)—(d)). The owner or operator of a landfill must control the collected gas by routing it to either: (1) A non-enclosed flare designed and operated according to the requirements of 40 CFR 60.18, (2) an enclosed control device achieving 98-percent NMOC reduction or an outlet concentration of 20 ppm NMOC by volume or less, or (3) a gas treatment system that processes the collected gas for subsequent sale or beneficial use (40 CFR 62.16714(c)).

The requirements of the Federal plan are the same as the requirements of the 2016 MSW Landfills EG. Consistent with a **Federal Register** document on March 16, 2020 (85 FR 17244), this Federal plan applies the “opt-in” provisions that allow MSW landfills affected by the NSPS and EG to demonstrate compliance with the major compliance provisions of the National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills (MSW Landfills NESHAP) in lieu of complying with the analogous

provisions in the NSPS and EG. The opt-in provisions allow landfills to follow one set of operational, compliance, monitoring, and reporting provisions for pressure and temperature. The opt-in provisions appear in this Federal plan at 40 CFR 62.16716, 62.16720, and 62.16722, as well as corresponding recordkeeping and reporting provisions in 40 CFR 62.16724 and 62.17726.

This Federal plan also applies a technical correction made to the compliance provisions section of the MSW Landfills EG (85 FR 17244, March 16, 2020). The technical correction appears in this Federal plan at 40 CFR 62.16720(a)(3)(ii). The technical correction accounts for elevated temperature measurement as a parameter for which the root cause analysis is required and for which the owner or operator must follow the corrective action schedule.

#### *D. What are the final performance testing and monitoring requirements?*

##### 1. NMOC Emissions Rate

The EPA requires that, to determine if a GCCS is required, the owner or operator must determine NMOC emissions using one or both of the two emission rate equations in the rule and one of four optional methods to determine the model inputs (referred to as tier methods in the rule) (40 CFR 62.16718(a)). Tier 1 uses default assumptions for methane generation rate and NMOC concentration in the emissions model (40 CFR 62.16718(a)(2)). Tier 2 requires testing to determine a site-specific NMOC concentration. Tier 3 requires testing to determine a site-specific NMOC concentration and methane generation rate (40 CFR 62.16718(a)(4)). Any MSW landfill that exceeds the NMOC emissions threshold using Tier 2 or 3 would install a GCCS unless the owner or operator chooses to use Tier 4 (40 CFR 62.16718(a)(6)).

Tier 4 is based on SEM to demonstrate that surface emissions are low (40 CFR 62.16718(a)(6)). An owner or operator can use Tier 4 only if the MSW landfill owner or operator can demonstrate that NMOC emissions are greater than or equal to 34 Mg per year but less than 50 Mg per year using Tier 1 or Tier 2. An MSW landfill employing Tier 4 that can demonstrate that surface emissions are below 500 ppm for four consecutive quarters would not trigger the requirement to install a GCCS even if Tier 1, 2, or 3 calculations indicate that the 34 Mg per year threshold has been exceeded. However, once SEM demonstrates emissions exceeding 500

ppm (40 CFR 62.16718(a)(6)(v)), the MSW landfill would be required to install a GCCS according to the schedule in section V.B of this preamble and Table 1 to 40 CFR part 62, subpart OOO.

##### 2. Gas Collection System Monitoring

The EPA requires that the LFG collection system must be equipped with a sampling or access port and the owner or operator must periodically monitor gauge pressure in the gas collection header, monitor nitrogen or oxygen content in the LFG, and monitor temperature of the LFG (40 CFR 62.16722(a)).

##### 3. Flare Monitoring

The EPA requires that, if a flare is used, the owner or operator must monitor the flare using a heat sensing device that indicates presence of a flame and a device that records flow to the flare and any bypass lines (40 CFR 62.16722(c)).

##### 4. Control Device Testing and Monitoring

The EPA requires that, if an enclosed control device is used, the owner or operator must conduct an initial performance test (40 CFR 62.16714(c)). The owner or operator must then operate the device as required by the manufacturer's specifications, install a temperature monitoring device, and install a device that records flow to the control device and any bypass lines (40 CFR 62.16722(b)). A temperature monitoring device is not required for boilers or process heaters with a design heat capacity of 44 megawatts or greater (40 CFR 62.16722(b)(1)).

#### *E. What are the final recordkeeping and reporting requirements?*

The EPA requires that owners or operators must retain records of all required monitor readings (40 CFR 62.16726). Owners or operators must submit certain required performance test reports, NMOC emission rate reports, and annual reports documenting compliance and any deviations from the operating standards in the Federal plan (40 CFR 62.16724). As noted in section V.C of this preamble, the Federal plan adds the opt-in provisions consistent with the MSW Landfills EG. Corresponding recordkeeping and reporting provisions appear in 40 CFR 62.16724(h), (k), and (q) and 62.16726(e). Also as noted in section V.C of this preamble, the Federal plan applies a technical correction to the compliance provisions and the corresponding reporting requirement in the reporting section. Those reporting corrections appear in this Federal plan

at 40 CFR 62.16724(h)(7) and ensure that the owner or operator conducts a corrective action analysis, develops an implementation schedule, and reports corrective action(s) to address not only positive pressure, but also elevated temperature.

All required reports must be submitted through the EPA's CDX using the Compliance and Emissions Data Reporting Interface (CEDRI) (40 CFR 62.16724(j)). Owners or operators are allowed to maintain electronic copies of the records in lieu of hardcopies to satisfy Federal recordkeeping requirements.

The requirement to submit performance test data electronically to the EPA would apply only to those performance tests conducted using test methods that are supported by the Electronic Reporting Tool (ERT). A listing of the pollutants and test methods supported by the ERT is available at: [https://www3.epa.gov/ttn/chief/ert/ert\\_info.html](https://www3.epa.gov/ttn/chief/ert/ert_info.html). When the EPA adds new methods to the ERT, a notice will be sent out through the Clearinghouse for Inventories and Emissions Factors (CHIEF) Listserv (<https://www.epa.gov/airemissions-inventories/emissionsinventory-listservs>) and a notice of availability will be added to the ERT website. The EPA encourages landfill owners or operators to check the ERT website regularly for up-to-date information on methods supported by the ERT.

## VI. Implementation of the Federal Plan and Delegation

### A. Background of Authority

Under CAA section 111(d) and the EPA's regulations implementing that section, the EPA adopts EG that are applicable to existing MSW landfills. These EG are implemented when the EPA approves a state or tribal plan or adopts a Federal plan that implements and enforces the EG. As discussed in section III of this preamble, this final action regulates existing MSW landfills in states or Indian country that do not have fully approved plans in effect to implement the EG.

Congress has determined that the primary responsibility for air pollution prevention and control rests with state, tribal, and local agencies. See CAA section 101(a)(3). Consistent with that overall determination, Congress established CAA section 111(d) with the intent that state, tribal, and local agencies take the primary responsibility for ensuring, with regard to existing sources, that the standards of performance and other requirements contemplated by that section, and

implemented by the EPA through its general regulations implementing that section and its particular EGs, are achieved. Also, in CAA section 111(d) Congress explicitly required that the EPA establish procedures that are like those under CAA section 110(c) for state implementation plans. Although Congress required the EPA to propose and promulgate a Federal plan for states and tribes that fail to submit approvable plans on time, states and tribes may submit plans after promulgation of this Federal plan. The EPA strongly encourages states and tribes that are unable to submit approvable plans to request delegation of the Federal plan so that they can have primary responsibility for implementing the 2016 MSW Landfills EG, consistent with the intent of Congress.

The preferred outcome under the statute and the regulations results when the state, tribal, and local agencies implement an EPA-approved state or tribal plan because state, tribal, and local agencies not only have the responsibility to implement the 2016 MSW Landfills EG, but also have the practical knowledge and enforcement resources critical to achieving the highest rate of compliance. In cases where states are unable to develop and submit approvable state or tribal plans, it is still preferable for the state, tribal, and local agencies to be the implementing agency. For these reasons, the EPA will do all that it can to expedite delegation of the Federal plan to state, tribal, and local agencies, whenever possible, in cases where states or tribes are unable to develop and submit approvable state or tribal plans. The EPA will also continue to review and approve state or tribal plans after promulgation of this Federal plan.

### B. Mechanisms for Transferring Authority

There are two mechanisms for transferring implementation authority to state, tribal, and local agencies: (1) The EPA approves of a state plan after the Federal plan is in effect; and (2) if a state does not submit or obtain approval of its own plan, the EPA provides delegation to a state or tribe with the authority to implement certain portions of this Federal plan to the extent appropriate and if allowed by state law. Both options are described in more detail below.

#### 1. Federal Plan Becomes Effective Prior to Approval of a State Plan

After MSW landfills in a state become subject to the Federal plan, the state or tribal agency may still adopt and submit a state or tribal plan to the EPA. If the

EPA determines that the plan is as protective as the 2016 MSW Landfills EG, the EPA will approve the state or tribal plan. If the EPA determines that the plan is not as protective as the 2016 MSW Landfills EG, the EPA will approve the portions of the plan that are consistent with the 2016 MSW Landfills EG. If a state or tribal plan is approved in part, portions of the Federal plan will apply to the designated MSW landfills in lieu of the disapproved portions of the state or tribal plan until the state or tribe addresses the deficiencies in the plan and the revised plan is approved by the EPA. Prior to any disapproval, the EPA will work with states and tribes in an attempt to reconcile areas of the plan that remain inconsistent with the EG.

Upon the effective date of a state or tribal plan, the Federal plan will no longer apply to MSW landfills covered by such a plan and the state or tribe would implement and enforce the state plan in lieu of the Federal plan. When an EPA Regional office approves a state or tribal plan, it will amend the appropriate subpart of 40 CFR part 62 to indicate such approval.

#### 2. State or Tribe Taking Delegation of the Federal Plan

The EPA, in its discretion, may delegate to states or tribes the authority to implement this Federal plan. As discussed above, the EPA has concluded that it is advantageous and the best use of resources for states or tribes to agree to undertake, on the EPA's behalf, administrative and substantive roles in implementing the Federal plan to the extent appropriate and where authorized by Federal, state, or tribal law. If a state or tribe requests delegation, the EPA will generally delegate the entire Federal plan to the state or tribe. These functions include administration and oversight of compliance, reporting, and recordkeeping requirements, MSW landfill inspections, and preparation of draft notices of violation, but will not include any authorities retained by the EPA. The EPA and agencies that have taken delegation will have responsibility for bringing enforcement actions against sources violating Federal plan provisions.

### C. Implementing Authority

The EPA Regional Administrators have been delegated the authority for implementing the MSW Landfills Federal Plan. All reports required by the Federal plan should be submitted to the appropriate Regional Administrator. Table 3 of this preamble lists the

addresses for the EPA Regional offices and the states they cover.

#### *D. Delegation of the Federal Plan and Retained Authorities*

If a state or tribe intends to take delegation of the Federal plan, the state or tribe must submit a written request for delegation of authority to the appropriate EPA Regional office (see Table 3). The state or tribe must explain how it meets the criteria for delegation. See, *Good Practices Manual for Delegation of NSPS and NESHAP* (U.S. EPA, February 1983), which is available in the docket for this action. The letter requesting delegation of authority to implement the Federal plan must: (1) Demonstrate that the state or tribe has adequate resources, as well as the legal authority, to administer and enforce the program; (2) include an inventory of designated MSW landfills, which includes those that have ceased operation, but have not been dismantled or rendered inoperable, and an inventory of the designated units' air emissions; (3) certify that a public hearing was held on the state or tribal delegation request; and (4) include a memorandum of agreement between the state or tribe and the EPA that sets forth the terms and conditions of the delegation, the effective date of the agreement, and the mechanism to transfer authority. Upon signature of the agreement, the appropriate EPA Regional office will publish an approval document in the **Federal Register**, thereby incorporating the delegation of authority into the appropriate subpart of 40 CFR part 62.

If authority is not delegated to a state or tribe, the EPA will implement the Federal plan. Also, if a state or tribe fails to properly implement a delegated portion of the Federal plan, the EPA will assume direct implementation and enforcement of that portion. The EPA will continue to hold enforcement authority along with the state or tribe even when the Agency has received delegation of the Federal plan. In all cases where the Federal plan is delegated, the EPA will retain and will not transfer authority to a state or tribe to approve the following items promulgated in 40 CFR 62.16710(b): (1) Approval of alternative methods to determine the site-specific NMOC concentration or a site-specific methane generation rate constant (k); (2) alternative emission standards; (3) major alternatives to test methods and monitoring; and (4) waivers of recordkeeping. 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 would involve the use of unproven technology or procedures or an entirely new method, which is sometimes necessary when the required test method or monitoring requirement is unsuitable.

Any MSW landfill owner or operator who wishes to petition the EPA for an alternative requirement to those in 40 CFR 62.16710(b) should submit a request to the appropriate Regional Administrator with a copy sent to the appropriate state.

### **VII. Title V Operating Permits**

#### *A. Title V Requirements for Existing MSW Landfills*

Existing MSW landfills with design capacities less than 2.5 million Mg or 2.5 million m<sup>3</sup> are not required to have a title V operating permit, unless they are a major source or are subject to title V (part 70 or part 71) for some other reason (e.g., subject to a CAA section 112 national emission standards for hazardous air pollutants or to another CAA section 111 NSPS). All existing MSW landfills with design capacities equal to or greater than 2.5 million Mg and 2.5 million m<sup>3</sup> must have a title V operating permit. Existing MSW landfills that are not currently subject to title V permitting because their design capacity is less than 2.5 million Mg or 2.5 million m<sup>3</sup> may trigger the requirement to apply for a title V permit in the future if the landfill's design capacity increases to equal or exceed 2.5 million Mg and 2.5 million m<sup>3</sup>. Such sources, newly subject to the requirement to obtain a title V permit for operating the MSW landfill at or above the 2.5 million Mg or 2.5 million m<sup>3</sup> capacity, become subject to the title V program 90 days after the effective date of this Federal plan, even if the design capacity report is submitted prior to that date. This date that triggers title V applicability is consistent with the 2016 MSW Landfills EG. The requirements of a Federal plan are applicable requirements for title V sources covered by a Federal plan. Additional information for filing a timely title V application should be obtained at the permitting authority. See 40 CFR 70.5(a)(1)(i) or 71.5(a)(1)(i).

An MSW landfill that is closed and is no longer subject to title V as a result of this Federal plan may remain subject to title V permitting requirements for another reason or reasons. See 40 CFR 62.16711(e) and 40 CFR 70.3 or 71.3. In such circumstances, the landfill would be required to continue operating in compliance with a title V permit.

#### *B. Title V and Delegation of Federal Plan*

Issuance of a title V permit is not equivalent to the approval of a state or tribal plan or delegation of a Federal plan. Legally, delegation of a standard or requirement results in a delegated state or tribe standing in for the EPA as a matter of Federal law. This means that obligations a source may have to the EPA under a federally promulgated standard become obligations to the state or tribal agency (except for functions that the EPA retains for itself) upon delegation.<sup>4</sup> Although states or tribes may have the authority under their respective laws to incorporate CAA section 111 requirements into their title V permits, and implement and enforce these requirements in those permits without first taking delegation of the CAA section 111 Federal plan, the state or tribe is not standing in for the EPA as a matter of Federal law in this situation. Where a delegation of a CAA section 111 Federal plan is granted to a state or tribal agency, obligations that a source has to retain functions under the Federal plan still remain after a title V permit is issued to the source. As a result, the EPA maintains that an approved 40 CFR part 70 operating permits program cannot be used as a mechanism to transfer the authority to implement and enforce the Federal plan from the EPA to a state or tribe.

A state or tribe may have the authority under state or tribal law to incorporate CAA section 111 requirements into its title V permits and implement and enforce these requirements in that context without first taking delegation of the CAA section 111 Federal plan.<sup>5</sup> Some states or tribes, however, may not be able to implement and enforce a CAA section 111 standard in a title V permit under state or tribal law until the CAA section 111 standard has been delegated. In these situations, a state or tribe should not issue a 40 CFR part 70 permit to a source subject to a Federal plan before taking delegation of the CAA section 111 Federal plan.

However, if a state or tribe can provide an attorney general's (AG's) opinion delineating its authority to incorporate CAA section 111

<sup>4</sup> If the Administrator chooses to retain certain authorities under a standard, those authorities cannot be delegated, e.g., alternative methods of demonstrating compliance.

<sup>5</sup> The EPA interprets the phrase "assure compliance" in CAA section 502(b)(5)(A) to mean that permitting authorities will implement and enforce each applicable standard, regulation, or requirement which must be included in the title V permits that the permitting authority issues. See definition of "applicable requirements" in 40 CFR 70.2. See also 40 CFR 70.4(b)(3)(i) and 70.6(a)(1).

requirements into its title V permits, and then implement and enforce these requirements through its title V permits without first taking delegation of the requirements, then a state or tribe does not need to take delegation of the CAA section 111 requirements for the purposes of title V permitting.<sup>6</sup> In practical terms, without approval of a state or tribal plan, or an adequate AG's opinion, states and tribes with approved 40 CFR part 70 permitting programs open themselves up to potential questions regarding their authority to issue permits containing CAA section 111 requirements and to assure compliance with these requirements. Such questions could lead to the issuance of a notice of deficiency for a state's or tribe's 40 CFR part 70 program. As a result, prior to a state or tribal permitting authority drafting a 40 CFR part 70 permit for a source subject to a CAA section 111 Federal plan, the state or tribe, the EPA Regional office, and source in question are advised to ensure that delegation of the relevant Federal plan has taken place or that the permitting authority has provided to the EPA Regional office an adequate AG's opinion.

In addition, if a permitting authority chooses to rely on an AG's opinion and not take delegation of a Federal plan, a CAA section 111 source subject to the Federal plan in that state must simultaneously submit to both the EPA and the state or tribe all reports required by the standard to be submitted to the EPA. Given that these reports are necessary to implement and enforce the CAA section 111 requirements when they are included in the title V permits, the permitting authority needs to receive these reports at the same time as the EPA.

In the situation where a permitting authority chooses to rely on an AG's opinion and not take delegation of a Federal plan, the EPA Regional offices will be responsible for implementing and enforcing CAA section 111 requirements outside of any title V permits. Moreover, in this situation, the EPA Regional offices will continue to be responsible for conducting any other administrative functions required under this Federal plan or any other CAA section 111 Federal plan. See, *e.g.*, section V.B of this preamble titled

“What are the final compliance schedules?”

It is important to note that the EPA is not using its authority under 40 CFR 70.4(i)(3) to request that all states and tribes that do not take delegation of this Federal plan submit supplemental AG's opinions currently. However, the EPA Regional offices must request, and permitting authorities must provide, such opinions when the EPA questions a state's or tribe's authority to incorporate CAA section 111 requirements into a title V permit and implement and enforce these requirements in that context without delegation.

### VIII. Incorporation by Reference

In accordance with the requirements of 1 CFR 51.5, we are finalizing regulatory text in 40 CFR 62.16722(i) that includes the IBR of 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), as an alternative for determining oxygen for wellhead standards in 40 CFR 62.16722(a)(2)(ii) and 62.16722(a)(2)(iii)(B). For this test method, a gas sample is continuously extracted from a duct and conveyed to a portable analyzer for determination of nitrogen oxides, carbon monoxide, and oxygen gas concentrations using electrochemical cells. Analyzer design specifications, performance specifications, and test procedures are provided to ensure reliable data. This method is an alternative to EPA methods and is consistent with the methods already allowed under the MSW Landfills NSPS (40 CFR part 60, subpart XXX) and MSW Landfills EG (40 CFR part 60, subpart Cf). The ASTM standard is available from the ASTM, 100 Barr Harbor Drive, Post Office Box C700, West Conshohocken, PA 19428–2959. See <http://www.astm.org>. This IBR has been approved by the Office of the Federal Register and the method is federally enforceable under the CAA as of the effective date of this final rulemaking.

### IX. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at <https://www.epa.gov/laws-regulations/laws-and-executive-orders>.

*A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review*

This action is not a significant regulatory action and was, therefore, not submitted to the Office of Management and Budget (OMB) for review.

#### *B. Paperwork Reduction Act (PRA)*

This action does not impose any new information collection burden under the PRA. OMB previously reviewed and approved the information collection activities contained in the 2016 MSW Landfills EG and assigned OMB control number 2060–0720. This action simply establishes the MSW Landfills Federal Plan to implement the 2016 MSW Landfills EG for those states that do not have a state plan implementing the EG and, therefore, the information collection burden for landfills regulated under this Federal Plan are already accounted for within the information collection activities approved under OMB control number 2060–0720.

#### *C. Regulatory Flexibility Act (RFA)*

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. The small entities subject to the requirements of this action are small MSW landfills. The Agency has determined that up to 15 small entities, representing approximately 13 percent of the total number of small entities subject to the Federal plan, may experience an impact of greater than 3 percent of sales or revenues. Details of this analysis are presented in the memorandum, *Small Entity Screening Assessment for Proposed Federal Plan for Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills*, which is available in the docket for this action. Although Oklahoma submitted corrections to the inventory of MSW landfills during the comment period, the changes were not expected to significantly affect the small entity screening assessment; therefore, a new analysis was not performed. More details of the general economic analysis of the EG, which this action implements, are available in the docket for the 2016 MSW Landfills EG (Docket ID Item No. EPA–HQ–OAR–2014–0451–0225).

As explained in the preamble to the proposed rule (84 FR 43755, August 22, 2019), more details about outreach to small businesses conducted during the development of the 2016 MSW Landfills EG, which this action implements, are

<sup>6</sup> It is important to note that an AG's opinion submitted at the time of initial title V program approval is sufficient if it demonstrates that a state, local authority, territory, or tribe has adequate authority to incorporate CAA section 111 requirements into its title V permits and to implement and enforce these requirements through its title V permits without delegation.

available in Docket ID No. EPA–HQ–OAR–2014–0451.

#### *D. Unfunded Mandates Reform Act (UMRA)*

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538. This action implements mandates specifically and explicitly set forth in 40 CFR 60.27 without the exercise of any policy discretion by the EPA.

We note, however, that the EG may affect small governments because small governments operate MSW landfills (80 FR 52146, August 27, 2015). This action implements the promulgated EG. In developing the final 2016 MSW Landfills EG, the EPA consulted with small governments pursuant to a plan established under section 203 of the UMRA to address impacts of regulatory requirements in the rule that might significantly or uniquely affect small governments. The EPA also held meetings as discussed in section IX.F of this preamble.

#### *E. Executive Order 13132: Federalism*

The EPA has concluded that this action may have federalism implications, because the rule imposes substantial direct compliance costs on state or local governments, and the Federal government will not provide the funds necessary to pay those costs. The EPA provided a federalism summary impact statement for the 2016 MSW Landfills EG, as follows: The EPA consulted with state and local officials early in the process of developing the 2016 MSW Landfills EG to permit them to have meaningful and timely input into its development. In developing the regulatory options reflected in the proposed and final 2016 MSW Landfills EG, the EPA consulted with eight national organizations representing state and local elected officials. Additionally, the Environmental Council of the States, the National Association of Clean Air Agencies, and the Association of State and Territorial Solid Waste Management Officials participated in preproposal briefings. Finally, in addition to these associations, over 140 officials representing state and local governments across the nation participated in at least one of three preproposal briefings in the fall of 2013 (September 10, 2013, November 7, 2013, and November 14, 2013), which is summarized in the docket for the 2016 MSW Landfills EG (Docket ID Item No. EPA–HQ–OAR–2014–0451–0013). The EPA received comments on the 2016 MSW Landfills EG from over 40 entities representing state and local governments. The EPA conducted an

additional federalism outreach meeting on April 15, 2015.

The principal intergovernmental concerns raised during the preproposal consultations, as well as during the proposed rule's public comment period, include: (1) Implementation concerns associated with shortening of GCCS installation and/or expansion timeframes; (2) concerns regarding significant lowering of the design capacity or emission thresholds; (3) the need for clarifications associated with wellhead operating parameters; and (4) the need for consistent, clear, and rigorous surface monitoring requirements. In response to these comments and based upon the available data, the EPA decided not to adjust the design capacity or significantly lower the emission threshold. The EPA also decided not to adjust the time allotted for installation of the GCCS or expansion of the wellfield. In the proposed MSW Landfills EG (80 FR 52121, August 27, 2015), the EPA highlighted specific concerns raised by commenters, which included state agencies as well as landfill owners or operators, about the interaction between shortened lag times and design plan approvals, costs, and safety concerns associated with reduced lag times and the need for flexibility for lag time adjustments. The EPA adjusted wellhead operating parameters to limit corrective action requirements to negative pressure and temperature. The EPA also acknowledged concerns about wellhead operating parameters in 80 FR 52121 (August 27, 2015) and considered public comments in favor of and against retention of the parameters.

A complete list of the comments from state and local governments was provided to OMB and was placed in the 2016 MSW Landfills EG Docket (*Final Report of the Small Business Advocacy Review Panel on EPA's Planned Proposed Rules Standards of Performance for Municipal Solid Waste Landfills and Review of Emissions Guidelines for Municipal Solid Waste Landfills*, Docket ID Item No. EPA–HQ–OAR–2014–0451–0139). In addition, the detailed response to comments from these entities is contained in the EPA's Response to Comments document for the 2016 MSW Landfills EG (Docket ID Item No. EPA–HQ–OAR–2014–0451–0229). As required by section 8(a) of Executive Order 13132, the EPA included a certification from its Federalism official stating that the EPA had met the Executive Order's requirements in a meaningful and timely manner when it sent the draft of the 2016 MSW Landfills EG to OMB for review pursuant to Executive Order

12866. A copy of the certification is included in the record for the 2016 MSW Landfills EG (*Outreach under Executive Order 13132 for MSW Landfills*, Docket ID Item Nos. EPA–HQ–OAR–2014–0451–0013 and EPA–HQ–OAR–2014–0451–0100).

#### *F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments*

This action has tribal implications as specified in Executive Order 13175. However, it will neither impose substantial direct compliance costs on federally recognized tribal governments nor preempt tribal law. The database used to estimate impacts of the 2016 MSW Landfills EG, identified one tribe, the Salt River Pima-Maricopa Indian Community, which owns three landfills potentially subject to this Federal plan. One of these landfills is open, the Salt River Landfill, and is already controlling emissions under the current NSPS/EG framework, so while subject to this subpart, the costs of this rule are not substantial. Two other landfills located in this tribe are closed and anticipated to meet the definition of the closed landfill subcategory. One of the closed landfills, the Tri Cities Landfill, is already controlling emissions under the current NSPS/EG framework and will not incur substantial additional compliance costs under the Federal plan. The other landfill, North Center Street Landfill, is not estimated to install controls under the Federal plan. The EPA offered consultation and coordination with Indian tribes on this action to permit them to have meaningful and timely input into its development. However, no consultation was requested.

#### *G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks*

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of “covered regulatory action” in section 2–202 of the Executive Order. This action is not subject to Executive Order 13045 because it implements a previously promulgated Federal standard.

#### *H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use*

This action is not subject to Executive Order 13211 because it is not a

significant regulatory action under Executive Order 12866.

*I. National Technology Transfer and Advancement Act (NTTAA) and 1 CFR Part 51*

This action involves technical standards. The EPA has decided to use voluntary consensus standard ASTM D6522–11, “Standard Test Method for the 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,” as an acceptable alternative to EPA Method 3A of appendix A–2 of part 60 when used at the wellhead before combustion. It is advisable to know the flammability and check the lower explosive limit of the flue gas constituents prior to sampling, in order to avoid undesired ignition of the gas. The results of ASTM D6522–11 may be used to determine nitrogen oxides and carbon monoxide emission concentrations from natural gas combustion at stationary sources. This test method may also be used to monitor emissions during short-term emission tests or periodically in order to optimize process operation for nitrogen oxides and carbon monoxide control. The EPA’s review is documented in the memorandum, *Voluntary Consensus Standard Results for Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, 2016*, which is available in the docket for the 2016 MSW Landfills EG (Docket ID Item No. EPA–HQ–OAR–2014–0451–0206). In this rule, the EPA is finalizing regulatory text for 40 CFR part 62, subpart OOO, that includes IBR in accordance with requirements of 1 CFR 51.5. Specifically, the EPA is incorporating by reference ASTM D6522–11. See section VIII. of this preamble for information on the availability of this material.

*J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations*

The EPA believes that this action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994). The EPA has determined that this action increases the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any

population, including any minority, low-income, or indigenous populations. To the extent that any minority, low-income, or indigenous subpopulation is disproportionately impacted by LFG emissions due to the proximity of their homes to sources of these emissions, that subpopulation also stands to see increased environmental and health benefit from the emission reductions called for by this action. The results of the demographic analysis are presented in the *EJ Screening Report for Municipal Solid Waste Landfills, July 2016*, a copy of which is available in the 2016 MSW Landfills EG Docket (Docket ID Item No. EPA–HQ–OAR–2014–0451–0223).

*K. Congressional Review Act (CRA)*

This action is subject to the CRA and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a “major rule” as defined by 5 U.S.C. 804(2).

*L. Clean Air Act Section 307(d)*

This final rule is subject to the provisions of CAA section 307(d). CAA section 307(d)(1)(C) provides that CAA section 307(d) applies to, among other things, “the promulgation or revision of any standard of performance under section 7411 of this title.” 42 U.S.C. 7407(d)(1)(C). This final rule promulgates a Federal plan, which includes promulgation of a standard of performance, pursuant to the authority of CAA section 111(d). The Agency has complied with procedural requirements of CAA section 307(d) during the course of this rulemaking.

**List of Subjects in 40 CFR Part 62**

Environmental protection, Administrative practice and procedures, Air pollution control, Incorporation by reference, Intergovernmental relations, Reporting and recordkeeping requirements.

**Michael S. Regan,**  
*Administrator.*

For the reasons set forth in the preamble, the Environmental Protection Agency amends 40 CFR part 62 as follows:

**PART 62—APPROVAL AND PROMULGATION OF STATE PLANS FOR DESIGNATED FACILITIES AND POLLUTANTS**

■ 1. The authority citation for part 62 continues to read as follows:

*Authority:* 42 U.S.C. 7401 *et seq.*

**Subpart A—General Provisions**

■ 2. Section 62.13 is amended by:

- a. Revising paragraph (b); and
- b. Adding paragraphs (f) through (j).

The revisions and additions read as follows:

**§ 62.13 Federal plans.**

\* \* \* \* \*

(b) The substantive requirements of the municipal solid waste landfills Federal plan that implements 40 CFR part 60, subpart Cc of this chapter, are contained in subpart GGG of this part. These requirements include emission limits, compliance schedules, testing, monitoring, and reporting and recordkeeping requirements. After June 21, 2021, per paragraph (j) of this section, the substantive requirements of the municipal solid waste landfills Federal plan are contained in subpart OOO of this part and owners and operators of municipal solid waste landfills must comply with subpart OOO of this part or a state/tribal plan implementing 40 CFR part 60, subpart Cf of this chapter, instead of subpart GGG of this part.

\* \* \* \* \*

(f) [Reserved]

(g) The substantive requirements of the sewage sludge incineration units Federal plan are contained in subpart LLL of this part. These requirements include emission limits, compliance schedules, testing, monitoring, and reporting and recordkeeping requirements.

(h) [Reserved]

(i) [Reserved]

(j) The substantive requirements of the municipal solid waste landfills Federal plan that implements 40 CFR part 60, subpart Cf of this chapter, are contained in subpart OOO of this part. These requirements include emission limits, compliance schedules, testing, monitoring, and reporting and recordkeeping requirements.

■ 3. Amend § 62.1115 by adding paragraph (b)(2) to read as follows:

**Subpart F—California**

**§ 62.1115 Identification of sources.**

\* \* \* \* \*

(b) \* \* \*

(2) The requirements of §§ 60.34f(c), 60.36f(a)(5), 60.37f(a)(2) and (3), 60.38f(k), and 60.39f(e)(2) and (5) of this chapter are not met since the plan does not provide for wellhead operational standards, wellhead monitoring, corrective action and recordkeeping related to temperature. Municipal solid waste landfills subject to the plan in § 62.1100(b)(7) must also implement the provisions of §§ 62.16716(c),

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.  
62.16711 Designated facilities.  
62.16712 Compliance schedule and increments of progress.  
62.16714 Standards for municipal solid waste landfill emissions.  
62.16716 Operational standards for collection and control systems.  
62.16718 Test methods and procedures.  
62.16720 Compliance provisions.  
62.16722 Monitoring of operations.  
62.16724 Reporting guidelines.  
62.16726 Recordkeeping guidelines.  
62.16728 Specifications for active collection systems.  
62.16730 Definitions.

**§ 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

$C_{\text{NMOC}}$ . 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.

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

Where:

$M_{\text{NMOC}}$  = Total NMOC emission rate from the landfill, megagrams per year.

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

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

$M_i$  = Mass of solid waste in the  $i^{\text{th}}$  section, megagrams.

$t_i$  = Age of the  $i^{\text{th}}$  section, years.

$C_{\text{NMOC}}$  = Concentration of NMOC, parts per million by volume as hexane.

$3.6 \times 10^{-9}$  = 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.

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

Where:

$M_{\text{NMOC}}$  = 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,  $\text{year}^{-1}$ .

$t$  = Age of landfill, years.

$C_{\text{NMOC}}$  = Concentration of NMOC, parts per million by volume as hexane.

$c$  = Time since closure, years; for an active landfill  $c = 0$  and  $e^{-kc} = 1$ .

$3.6 \times 10^{-9}$  = 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  $C_{\text{NMOC}}$  as carbon to  $C_{\text{NMOC}}$  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:

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

Where:

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

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

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

(1) *Flow rate.* The flow rate of landfill gas,  $Q_{\text{LFG}}$ , 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,  $C_{\text{NMOC}}$ , 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  $C_{\text{NMOC}}$  as carbon to  $C_{\text{NMOC}}$  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  $C_{\text{NMOC}}$  as carbon to  $C_{\text{NMOC}}$  as hexane. Equation 4 must be used to calculate efficiency:

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

Where:

$\text{NMOC}_{\text{in}}$  = Mass of NMOC entering control device.

$\text{NMOC}_{\text{out}}$  = 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 (L<sub>o</sub>) 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:

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

Where:

Q<sub>m</sub> = Maximum expected gas generation flow rate, cubic meters per year.

L<sub>o</sub> = Methane generation potential, cubic meters per megagram solid waste.

R = Average annual acceptance rate, megagrams per year.

k = Methane generation rate constant, year<sup>-1</sup>.

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<sup>-kc</sup> = 1).

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

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

Where:

Q<sub>M</sub> = Maximum expected gas generation flow rate, cubic meters per year.

k = Methane generation rate constant, year<sup>-1</sup>.

L<sub>o</sub> = Methane generation potential, cubic meters per megagram solid waste.

M<sub>i</sub> = Mass of solid waste in the i<sup>th</sup> section, megagrams.

t<sub>i</sub> = Age of the i<sup>th</sup> 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  $\pm 10$  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  $\pm 1$  percent of the temperature being measured expressed in degrees Celsius or  $\pm 0.5$  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](mailto:fedreg.legal@nara.gov), or go to [www.archives.gov/federal-register/cfr/ibr-locations.html](http://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](http://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](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.

(l) 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:

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

Where:

$Q_i$  = NMOC emission rate from the  $i$ th section, megagrams per year.

$k$  = Methane generation rate constant, year<sup>-1</sup>.

$L_o$  = 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.

$C_{\text{NMOC}}$  = Concentration of NMOC, parts-per-million by volume.

$3.6 \times 10^{-9}$  = 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  $C_{\text{NMOC}}$  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  $C_{\text{NMOC}}$  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 $\geq 34$ megagrams per year. <sup>1</sup>	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 $\geq 50$ megagrams per year submitted under a previous regulation. <sup>2</sup>
Increment 2—Award Contracts.	20 months after initial NMOC emission rate report or the first annual emission rate report showing NMOC emissions $\geq 34$ megagrams per year. <sup>1</sup>	20 months after the most recent NMOC emission rate report showing NMOC emissions $\geq 34$ megagrams per year.	20 months after the most recent NMOC emission rate report showing NMOC emissions $\geq 50$ megagrams per year submitted under a previous regulation. <sup>2</sup>
Increment 3—Begin on-site construction.	24 months after initial NMOC emission rate report or the first annual emission rate report showing NMOC emissions $\geq 34$ megagrams per year. <sup>1</sup>	24 months after the most recent NMOC emission rate report showing NMOC emissions $\geq 34$ megagrams per year.	24 months after the most recent NMOC emission rate report showing NMOC emissions $\geq 50$ megagrams per year submitted under a previous regulation. <sup>2</sup>
Increment 4—Complete on-site construction.	30 months after initial NMOC emission rate report or the first annual emission rate report showing NMOC emissions $\geq 34$ megagrams per year. <sup>1</sup>	30 months after the most recent NMOC emission rate report showing NMOC emissions $\geq 34$ megagrams per year.	30 months after the first NMOC emission rate report or the first annual emission rate report showing NMOC emissions $\geq 50$ megagrams submitted under a previous regulation.

TABLE 1 TO SUBPART 000 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 $\geq 34$ megagrams per year. <sup>1</sup>	30 months after the most recent NMOC emission rate report showing NMOC emissions $\geq 34$ megagrams per year.	30 months after the first NMOC emission rate report or the first annual emission rate report showing NMOC emissions $\geq 50$ megagrams submitted under a previous regulation. <sup>2</sup>

<sup>1</sup> 50 megagrams per year NMOC for the closed landfill subcategory.

<sup>2</sup> 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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