



Municipal Solid Waste Landfills: Background Information Document for National Emission Standards for Hazardous Air Pollutants

Public Comments and Responses



N E S H A P

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**Municipal Solid Waste Landfills: Background Information Document
For National Emission Standards for Hazardous Air Pollutants
- Public Comments and Responses**

U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Emission Standards Division
Research Triangle Park, North Carolina 27711

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1.0 INTRODUCTION

On November 7, 2000, the U.S. Environmental Protection Agency (EPA) proposed national emission standards for hazardous air pollutants (NESHAP) for municipal solid waste (MSW) landfills. The proposed rule fulfills the requirements of the Clean Air Act (CAA), which requires EPA to regulate emissions of hazardous air pollutants (HAP) listed in section 112(b) of the CAA. In addition, the proposed rule would help implement the Urban Air Toxics Strategy developed under section 112(k) of the CAA.

This document contains summaries of the public comments that EPA received on the November 7, 2000 proposal and the May 23, 2002 supplemental proposal to establish NESHAP for MSW landfills. In this document, EPA responds to the public comments. This summary of public comments and EPA responses serves as the basis for revisions made to the landfills NESHAP between proposal and promulgation.

2.0 PUBLIC COMMENTS

The EPA received 10 comment letters for the November 7, 2000 proposed rule before the comment period closed on January 8, 2001. These comments are contained in category IV-D of Docket A-98-28. Two “follow-up” documents were received after the January 8, 2001 deadline as supplemental information for two of the ten original comment letters. These comments are contained in category IV-G of the same docket. The EPA also received 12 comment letters pertaining to the May 23, 2002 supplemental proposal for bioreactors. These comments are contained in category IV-L of the same docket. The commenter, affiliation, and item number in Docket A-98-28 are listed in Table 1. A list of acronyms and units of measure used in this document appear after the list of commenters.

**TABLE 1. DOCKET A-98-28
CATEGORY: IV-D**

Item Number	Commenter and Affiliation
IV-D-01	S. Shah, P.E., Principal Environmental Engineer Air Quality Permitting Program Department of Environmental Protection State of New Jersey (NJDEP) Trenton, NJ
IV-D-02	E. J. Skernolis, Director Government Affairs Waste Management, Inc. Washington, D.C.
IV-D-03	D. J. Kolaz, Chief Illinois Environmental Protection Agency Springfield, Illinois

**TABLE 1. DOCKET A-98-28 (CONTINUED)
CATEGORY IV-D**

Item Number	Commenter and Affiliation
IV-D-04	R. H. Colby, Chair Air Toxics Committee Association of Local Air Pollution Control Officials (ALAPCO) and B. L. Higgins, Chair Air Toxics Committee State and Territorial Air Pollution Program Administrators (STAPPA) Washington, D.C.
IV-D-05	J. H. Skinner, Ph.D. Executive Director and Chief Executive Officer The Solid Waste Association of North America (SWANA) Silver Spring, MD
IV-D-06	D.C. Foerter, Deputy Director Institute of Clean Air Companies (ICAC) Washington, D.C.
IV-D-07	E.W. Repa, Ph.D., Director Environmental Programs The National Solid Wastes Management Association (NSWMA) Washington, D.C.
IV-D-08	F.R. Caponi, Supervising Engineer Solid Waste Management County Sanitation Districts of Los Angeles County Whittier, CA
IV-D-09	E. L. Munsell, Deputy Assistant Secretary for Environment and Safety Department of the Navy Washington, D.C.
IV-D-10	R. J. Phaneuf, Chair Bioreactor Landfill Work Group Association of State and Territorial Solid Waste Management Officials (ASTSWMO) Washington, D.C.

**TABLE 1. DOCKET A-98-28 (CONTINUED)
CATEGORY IV-G**

Item Number	Commenter and Affiliation
IV-G-01 (follow-up to IV-D-01)	S. Shah, P.E., Principal Environmental Engineer Air Quality Permitting Program Department of Environmental Protection State of New Jersey (NJDEP) Trenton, NJ
IV-G-02 (follow-up to IV-D-09)	D. Newton, HAP Subcommittee Chair Naval Facilities Engineering Service Center Department of the Navy Port Hueneme, CA

**TABLE 1. DOCKET A-98-28 (CONTINUED)
CATEGORY IV-L**

Item Number	Commenter and Affiliation
IV-L-01	T. Tweedale Montana Coalition for Health, Environmental & Economic Rights Missoula, MT
IV-L-02	R. J. Phaneuf, Chair Bioreactor Landfill Work Group Association of State and Territorial Solid Waste Management Officials (ASTWSMO) Washington, D.C.
IV-L-03	J. H. Skinner, Ph.D. Executive Director and Chief Executive Officer The Solid Waste Association of North America (SWANA) Silver Spring, MD
IV-L-04	S. Hammond, P.E., Director Division of Solid & Hazardous Materials New York State Department of Environmental Conservation Albany, NY
IV-L-05	M. S. Gilliland, Manager Solid Waste Policy and Program Development Oregon Department of Environmental Quality Portland, OR
IV-L-06	E.W. Repa, Ph.D., Director Environmental Programs The National Solid Wastes Management Association (NSWMA) Washington, D.C.
IV-L-07	E. J. Skernolis, Director Government Affairs Waste Management, Inc. Washington, D.C.
IV-L-08	R. F. Hasemeier, P.E. Senior Solid Waste Engineer Gannett Fleming, Inc. Harrisburg, PA

**TABLE 1. DOCKET A-98-28 (CONTINUED)
CATEGORY IV-L**

Item Number	Commenter and Affiliation
IV-L-09	M. Hudgins, Vice President Landfill Technology Division Environmental Control Systems, Inc. Aiken, SC
IV-L-10	S. R. Wymbs, Executive Director Cumberland County Improvement Authority Millville, NJ
IV-L-11	H. Pak Trinet Industries, Inc. Walnut, CA
IV-L-12	J. M. Becker, P.E. Smith Management Group Louisville, KY

2.1 LIST OF ACRONYMS AND ABBREVIATIONS

Acronyms

CAA	Clean Air Act
CEMS	continuous emission monitoring systems
CFR	Code of Federal Regulations
EG	emission guidelines
EPA	Environmental Protection Agency
FR	Federal Register
GACT	generally available control technology
HAP	hazardous air pollutants
m ³	cubic meters

MACT	maximum available control technology
Mg	megagrams
Mg/yr	megagrams per year
MSW	municipal solid waste
NESHAP	national emission standards for hazardous air pollutants
NMOC	nonmethane organic compounds
NSPS	new source performance standards
PCS	petroleum contaminated soil
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RD&D	research, development, and demonstration
SSM	startup, shutdown, and malfunction
tpy	tons per year
VOC	volatile organic compounds

3.0 GENERAL COMMENTS

Comment: Many commenters (IV-D-02, IV-D-07, IV-D-06, IV-D-08, IV-D-05) support EPA's proposed approach for applying maximum available control technology (MACT) standards to MSW landfills. One commenter (IV-D-07) believes EPA has taken a reasonable approach to the proposed rule given the unique nature of landfills as a source category and the current state of landfill gas control technology. One commenter (IV-D-06) stated that since the NESHAP emission control requirements are already in effect under the emission guidelines/new source performance standards (EG/NSPS), the proposed NESHAP has already been proven to be technologically sound and fundamentally reasonable. Other commenters (IV-D-05, IV-D-08) stated that the proposed NESHAP affirms that the EG/NSPS requirements represent the most stringent control for HAP currently available. One commenter (IV-D-02) agrees with EPA that emissions control beyond those established by the EG/NSPS are not warranted.

Response: The EPA appreciates the commenters' support. The EPA continues to follow the requirements of the CAA in developing the final landfills NESHAP.

4.0 APPLICABILITY

Comment: One commenter (IV-D-09, IV-G-02) suggested that the language in §63.1935 be revised to prevent the NESHAP from extending part 60 control requirements to landfills that do not meet the control device applicability thresholds of 40 CFR part 60, subparts Cc and WWW (EG/NSPS). The commenter (IV-D-09, IV-G-02) considered the current language to be problematic because it implies that small landfills that would otherwise be area sources, but are collocated on major source facilities, become subject to EG/NSPS control even though they do not meet control criteria established in 40 CFR part 60. The commenter (IV-D-09, IV-G-02) believes that it would be unreasonable to control landfills that do not meet the capacity and emission criteria that trigger emission control in 40 CFR part 60. The commenter (IV-D-09, IV-G-02) stated that many military facilities which are major HAP sources have small, often closed, MSW landfills which are not subject to emission control. The commenter (IV-D-09, IV-G-02) provided EPA with a list of military major HAP source installations that have MSW landfills that have accepted waste since November of 1987 and are not subject to the EG/NSPS. The commenter (IV-D-09, IV-G-02) believes that EPA should not allow the rule to impact such facilities since EPA did not anticipate such impacts.

Response: At the time of proposal, EPA was uncertain of whether there were small landfills collocated at major sources. While the NESHAP applies to all major sources, it was not EPA's intent to require collection and control systems at landfills that are too small to meet the control criteria in the EG/NSPS. Because the EG/NSPS forms the MACT floor for landfills the NESHAP requires all major sources, including collocated sources, to comply with the EG/NSPS. However, the additional provisions of the NESHAP do not take effect until control is required by the EG/NSPS. The EPA revised §63.1935 to clarify the applicability of the NESHAP to major sources, area sources, and smaller landfills that are collocated with major sources. The

commenter correctly points out that some small landfills, including military facilities, will be subject to the landfills NESHAP as a result of being collocated with a major source. Landfills with design capacities less than 2.5 million megagrams (Mg) or 2.5 million cubic meters (m³) that are subject to the NESHAP because they are collocated with major sources comply with the NESHAP by complying with the NSPS or the Federal plan or EPA-approved and effective State or tribal plan that implements the EG. The only requirement of the NSPS, Federal plan, or State or tribal plan for such landfills is submittal of an initial design capacity report. The NESHAP does not extend collection and control requirements to landfills that do not meet the control device applicability thresholds of the EG/NSPS or impose additional requirements for such landfills. Sections 63.1945 and 63.1955 have been revised to clarify that the additional requirements of the NESHAP only apply when the landfill is required to install a collection and control system by the NSPS or the Federal, State, or tribal plan that implements the EG.

Comment: Two commenters (IV-D-07, IV-D-02) recommended that additional MACT requirements should not apply unless and until the site is determined to be meeting or exceeding the major source threshold of 10 tons per year (tpy) for a single HAP or 25 tpy for combination of HAP. One of the commenters (IV-D-02) recommended EPA require no control for area sources (i.e., not require area sources with EG/NSPS controls to meet the NESHAP general provisions and additional recordkeeping requirements) because larger area source landfills subject to EG/NSPS control requirements emit no more HAP than smaller uncontrolled landfills.

Response: The EPA intends that the landfills NESHAP apply to area sources that are subject to EG/NSPS control requirements (i.e., have design capacities of 2.5 million Mg and 2.5 million m³ or more, and estimated uncontrolled nonmethane organic compounds (NMOC) emissions of 50 megagrams per year (Mg/yr) or more). Therefore, EPA has not changed the rule in response to this comment. Regulation of area source landfills is required under section 112(k) as part of the Urban Air Toxics Strategy. Area sources may be controlled using MACT or generally available control technology (GACT), and EPA chose to regulate landfill area sources using GACT. For area source landfills that are 2.5 million Mg and 2.5 million m³ or greater in design capacity and have estimated uncontrolled NMOC emissions of 50 Mg/yr or more (calculated according to procedures in the EG/NSPS), EPA selected GACT to be the same as MACT. The EG/NSPS already covers these sources, so requiring GACT does not impose

additional control requirements. The only burden imposed on these sources by the NESHAP are some additional compliance determination and reporting requirements that are necessary under section 112 general provisions. These include startup, shutdown, and malfunction (SSM) provisions, use of continuous parameter monitoring data to determine compliance with the operating condition requirements, and reporting of deviations every 6 months as opposed to every year. The monitoring instruments, frequency of monitoring and required records of monitoring data are not different from the EG/NSPS, so the monitoring costs do not increase. The use of the monitoring results to determine compliance and the semiannual reports better assure continuous compliance and improve the enforceability of the NESHAP at minimal cost.

For MSW landfills smaller than 2.5 million Mg or 2.5 million m³ design capacity, or that have estimated uncontrolled NMOC emissions less than 50 Mg/yr and are not bioreactors, GACT is determined to be no control. Requiring these landfills to control emissions would result in additional and unreasonable control costs because these smaller landfills are not required to install controls by the EG/NSPS. These landfills are costly to control and emit relatively little HAP. Furthermore, the design capacity cutoff excludes those landfills least able to afford collection and control systems, for example, small businesses, and particularly, municipalities. See the proposal preamble (65 FR 66677, November 7, 2000) for additional discussion of area source landfills.

Note that the bioreactor portion of the NESHAP applies to major and area sources that equal or exceed the EG/NSPS design capacity criteria of 2.5 million Mg and 2.5 million m³ and operate as a bioreactor, regardless of whether they exceed the EG/NSPS 50 Mg/yr uncontrolled emission rate criteria. See Chapter 10 of this document for comments and responses regarding rule applicability and control requirements for bioreactors.

Comment: One commenter (IV-D-09) recommended that the statement in §63.1935 that states, "...Finally, most of the requirements of this subpart will not take effect until your landfill emits equal to or greater than 50 Mg/yr NMOC and has a design capacity equal to or greater than 2.5 million Mg and 2.5 million m³" be deleted. The commenter (IV-D-09) pointed out that the wording implies that there are some NESHAP requirements for landfills that do not exceed the emission rate and design capacity criteria. However, the commenter (IV-D-09) states that if a landfill does not exceed all of the stated criteria, it is not subject to control requirements and the NESHAP should not apply.

Response: The EPA revised §§63.1935 and 63.1945 to clarify the applicability of the NESHAP to major sources, area sources, and smaller landfills that are collocated with major sources. Major source landfills are subject to the landfills NESHAP and must comply with requirements imposed by the landfills NESHAP (§§63.1960 through 63.1980), which are described in the proposed rule. Smaller landfills that are collocated with major sources but fall below the EG/NSPS design capacity criteria of 2.5 million Mg and 2.5 million m³ are subject to the landfills NESHAP. These smaller landfills that are collocated with major sources comply with the NESHAP by complying with the NSPS or the Federal, State, or tribal plan that implements the EG. These landfills are subject to reporting requirements of the NSPS, Federal, State, or tribal plan (such as the design capacity report), but are not required to install a collection and control system or to comply with the additional NESHAP requirements. Similarly, conventional landfills collated with major sources that exceed the EG/NSPS design capacity criteria but have estimated uncontrolled NMOC emissions less than 50 Mg/yr would need to comply with the NSPS or the Federal, State or tribal plan requirements, such as periodically calculating annual emissions, but would not be required to install a collection and control system or to comply with the additional NESHAP requirements until they are required to install control systems under the EG/NSPS. (Note that timely control is required for bioreactor landfills with design capacities equal to or greater than 2.5 million Mg and 2.5 million m³, as explained in the supplemental proposal (67 FR 36460) and in Chapter 10 of this document.)

Area source landfills that fall below the NSPS design capacity and emissions criteria are not subject to the landfills NESHAP, but would follow the requirements of the NSPS or the Federal, State, or tribal plan that implements the EG. Area sources with design capacities greater than or equal to 2.5 million Mg and 2.5 million m³ and that have estimated uncontrolled NMOC emissions of 50 Mg/yr or more (or are bioreactors) are subject to the NESHAP. They must install a collection and control system under the NSPS, Federal, State, or tribal plan and comply with the additional requirements imposed by the NESHAP (§63.1960 through §63.1980). Applicability and control requirements for landfills with bioreactors have also been clarified. The applicability criteria for landfills with bioreactors in §63.1935 have been reworded since proposal to clarify that all major sources, all landfills collocated with major sources, and area sources meeting specified criteria are subject to the NESHAP. However, as specified in §§63.1947 and

63.1955(d), the requirements for timely control of bioreactors apply only to landfills that were active as of the promulgation date and have design capacities equal to or greater than 2.5 million Mg and 2.5 million m³, consistent with the supplemental proposal (67 FR 36460). See the supplemental proposal and the comment responses in Chapter 10 of this document.

Comment: One commenter (IV-D-09) recommended the revision of §63.1955, which states: "(b) If you are required by §60.752(b)(2) of 40 CFR part 60, subpart WWW, the Federal plan, EPA approved State or tribal plan, to install a collection and control system, you must comply with the general provisions specified in Table 1 of this subpart." The commenter (IV-D-09) suggested the section read, "When you are required in paragraph (a) of this section to install a collection and control system, you must comply with the general provisions specified in Table 1 of this subpart." The commenter (IV-D-09) recommended this change because language in section II.D of the preamble and proposed §63.1950 suggest that if controls are not required by the EG/NSPS, then the NESHAP doesn't apply. The commenter (IV-D-09) suggested the language changes in order to clarify requirements for small landfills collocated with major sources and to avoid applicability contradictions within the text.

Response: The EPA has not made the specific wording change suggested by the commenters, but has clarified the rule to address the issues raised. Clarifications made regarding applicability of the NESHAP to major sources, landfills collocated at major sources, and area sources are described in previous responses.

The general provisions in Table 1 and the specific requirements in §§63.1960 through 63.1980 apply to the landfills that must install a collection and control system under the NSPS or the Federal, State, or tribal plan that implements the EG. Therefore, EPA added language to §63.1955 to clarify that landfills that are required to install a collection and control system under the NSPS or the Federal, State, or tribal plan that implements the EG must also meet the requirements in §63.1960 through §63.1980 of the NESHAP. The EPA has also clarified, in §63.1945, the timing of when the additional NESHAP requirements apply. New affected sources must comply with the NESHAP by the date the final rule is published or at the time operation begins, whichever is last. The NESHAP requires the landfill to comply with the NSPS at that time. A landfill that is a new affected source must meet the additional requirements of the NESHAP that are over and above the NSPS (e.g. SSM requirements, semiannual reporting

requirements) on the date the landfill is required to install a collection and control system by the NSPS. Existing affected sources must comply with the NESHAP by 1 year after publication of the final rule. The NESHAP requires the landfill to comply with the NSPS or Federal, State or tribal plan that implements the EG (whichever applies to the landfill) at that time. The landfill must comply with the additional requirements of the NESHAP by the date the landfill is required by the NSPS or Federal, State or tribal plan to install a collection and control system or by the date 1 year after publication of the final NESHAP, whichever is later. Section 63.1950, which has not been changed, clarifies that the NESHAP requirements no longer apply once a landfill has met the EG/NSPS criteria for control system removal and is no longer required to control emissions. The timing of control system installation and removal for bioreactors has also been clarified. See the comment responses in Chapter 10 of this document.

Comment: One commenter (IV-D-09) suggested deleting the language in §63.1940 that defines an affected source as “each new or existing MSW landfill that has accepted waste at anytime since November 8, 1987, or has additional design capacity available for future waste deposition.” The commenter (IV-D-09) considered this language to contradict the preamble and §63.1935. The commenter (IV-D-09) stated that the November 8, 1987 criteria should be used for determining if a landfill is subject to control requirements under part 60 and the NESHAP, but by no means should it be used as the sole criteria for defining an affected source. Instead, the commenter (IV-D-09) suggested that the affected source should be one that meets all of the waste acceptance, design capacity and emission rate criteria.

Response: The EPA revised §§63.1935 and 63.1940 to clarify the applicability and identify the affected source of the NESHAP. The affected source is the entire MSW landfill in a contiguous geographical space where household waste is placed in or on the land and consists of one or more cells that are under common ownership or control. The facility may receive household waste as well as other types of Resource Conservation and Recovery Act (RCRA) Subtitle D waste. The affected source may be operated as a conventional landfill, or it may be operated completely or partially as a bioreactor. To be an affected source, the landfill must have accepted waste since November 9, 1987, or have additional capacity for waste deposition, and must be either: (1) a major source of HAP; (2) collocated with a major source of HAP; or (3) an area source with a design capacity greater than or equal to 2.5 million Mg and 2.5 million m³ and

with estimated uncontrolled NMOC emissions of equal to or greater than 50 Mg/yr. To be an affected source, a landfill that includes a bioreactor (as defined in the NESHAP) must meet the criteria in (1) or (2) listed above or be an area source landfill that has a design capacity equal to or greater than 2.5 million Mg and 2.5 million m³, and is not permanently closed as of the date the final NESHAP is published. (See Chapter 10 of this document for further information on requirements for bioreactors.)

Comment: Two commenters (IV-D-05, IV-D-08) noted that the EG/NSPS for landfills incorporates language allowing for alternatives from specific rule requirements. The commenters (IV-D-05, IV-D-08) stated that in the proposed NESHAP, it is not clear if any alternatives granted to a landfill operator under the EG/NSPS would also be in compliance with the proposed NESHAP. For this reason, the commenters (IV-D-05, IV-D-08) expressed concern that some landfills may be in compliance with local permits incorporating the EG/NSPS through state delegation, but would be out of compliance with the proposed NESHAP. The commenters (IV-D-05, IV-D-08) suggested that the proposed NESHAP be modified to include a specific clarification of this issue.

Response: The EPA intended to allow alternatives approved under the EG/NSPS to be allowed under the NESHAP. This includes, for example, alternative collection system designs and monitoring and reporting requirements approved under §60.752(b)(2) of Subpart WWW. However, all landfills that are subject to the NESHAP and required to use collection and control systems must meet the SSM requirements and must submit reports of deviations every 6 months. The rule language has been clarified regarding approved alternatives.

Comment: Two commenters (IV-D-07, IV-D-02) stated that the preamble suggests that landfills have no MACT requirements until the gas collection and control system is installed, under the EG/NSPS. The commenters (IV-D-07, IV-D-02) cited instances in which landfill owners/operators have installed and are operating landfill gas systems for reasons other than EG/NSPS, such as the control of gas migration or the protection of ground water, etc. The commenters (IV-D-07, IV-D-02) recommended that the proposed NESHAP be revised to clearly indicate that MACT requirements are not applicable until the date a landfill is required to install a collection and control system under the EG/NSPS.

Response: The EPA agrees with the commenters that most of the requirements of the NESHAP are not implemented until a collection and control system is installed under the EG/NSPS. The EPA expressed this intent in section III.H of the proposal preamble, which states, "...the additional requirements do not go into effect until a landfill has met the collection and control applicability criteria of the EG/NSPS." In response to these comments, EPA revised §§63.1935 through 63.1945 of the rule to clarify the applicability and timing of regulatory requirements. The landfill is subject to the NESHAP at the same time as specified in the proposal. At that time it is required to comply with the NSPS or the Federal, State, or tribal plan that implements the EG. The revised §63.1945 clarifies that new affected sources must comply with the additional NESHAP requirements (including the SSM plan, compliance determination, and semiannual reporting requirements) on the date the landfill is required to install a collection and control system under the NSPS. Existing affected sources must comply with the additional NESHAP requirements on the date the landfill is required to install a collection and control system under the NSPS or the Federal plan or EPA-approved State or tribal plan that implements the EG or by the date 1 year after publication of the final NESHAP, whichever is later. A separate section (§63.1947) explains the compliance dates for bioreactors.

Comment: One commenter (IV-D-03) requested clarification of the un-defined term "collocated", which is used in §63.1935.

Response: The EPA considers the term "collocated" to refer to landfill cells and other equipment and activities that are under common ownership or control and which occupy a single contiguous area. A contiguous area includes an area divided by a road, power right of way, or golf course, for example. The EPA believes that the term "collocated" in connection with source definitions under the CAA is commonly used and understood, and does not believe a definition unique to the landfill rule is necessary.

Comment: One commenter (IV-D-03) observed that proposed §60.1935, though entitled, "Am I subject to this subpart?" defined not only who the rule applies to, but also requires owners/operators to obtain title V permits for area landfill sources. The commenter (IV-D-03) recommends that a separate section titled "What requirements apply to area sources?" be added.

Response: The EPA has removed from §63.1935 the language requiring owners/operators of area source landfills to obtain title V permits. The rationale for deleting this

language and responses to other comments related to title V are contained in Chapter 11 of this document.

Comment: One commenter (IV-D-04) expressed concern with the “once in, always in” policy related to MACT standards. The commenter (IV-D-04) stated that the policy presents obstacles to some sources interested in reducing emissions through pollution prevention. The commenter (IV-D-04) recommended that EPA include provisions in the MSW landfill NESHAP clarifying that the “once in, always in” policy will not apply in certain qualifying cases. The commenter (IV-D-04) identified qualifying sources as those subject to a MACT standard that subsequently implement pollution prevention technologies that provide emission reductions no less than those required under the MACT standard.

Response: This comment appears to be written as a policy question about MACT standards in general, and does not include a specific comment relating to the NESHAP for MSW landfills. Without any clarifying information explaining how pollution prevention might be applied to landfills, EPA is unable to address the concern directly. As a result, EPA is not changing the landfills NESHAP in response to this comment.

5.0 MAJOR SOURCE DETERMINATION

Four commenters (IV-D-05, IV-D-08, IV-D-07, IV-D-02) believe that EPA overestimated the number of major source landfills. Two commenters (IV-D-05, IV-D-08) disagree with how EPA determined the number of major source landfills and requested that EPA reevaluate its determination of the number of major source landfills. Commenters (IV-D-05, IV-D-08, IV-D-07, IV-D-02) contended that only a small number of landfills should be considered as major source landfills for three reasons: (1) AP-42 emission factors are incorrect and overestimate landfill gas emissions; (2) EPA should have considered EG/NSPS controls when determining whether a landfill is a major source; and (3) using NMOC as a surrogate for HAP is arbitrary and EPA changed the definition of major source. Each of these three comments is summarized and addressed individually in this section.

Comment: Several commenters (IV-D-05, IV-D-08, IV-D-07, IV-D-02) stated that the AP-42 emission factors are incorrect and overestimate landfill gas HAP emissions. Commenters (IV-D-05, IV-D-08, IV-D-07, IV-D-02) stated that the factors contribute to EPA's overestimation of the number of major source landfills in the nation. Commenters (IV-D-05, IV-D-08) are concerned that the overestimated AP-42 values could potentially misdirect EPA in establishing policy for MSW landfills.

Two of the commenters (IV-D-02, IV-D-07) recommend that EPA undertake a complete revision of the AP-42 emission factors as the basis for any final regulations. Two other commenters (IV-D-05, IV-D-08) requested that EPA revise the AP-42 defaults to reflect the current LFG constituent levels. Two commenters (IV-D-05, IV-D-02) provided, and other commenters (IV-D-08, IV-D-07) referred to, a report, "Waste Industry Air Coalition Comparison of Recent Landfill Gas Analyses with Historic AP-42 Values." They claim the report shows that

the AP-42 defaults typically overestimate current concentrations of individual organic HAP compounds in landfill gas.

Commenters (IV-D-02, IV-D-07) stated that the methane emission generation models may be inaccurate in predicting NMOC, and therefore, do not accurately predict HAP emissions. The commenters (IV-D-02, IV-D-07) stated that generation curves for NMOC and methane are different because NMOC emissions generally decline more rapidly than methane emissions over time, but the model predicts constant NMOC concentrations over time. They also contend that the model does not take into account the attenuating effect of the landfill cover.

Response: The EPA used the current version of AP-42 to estimate the number of MSW landfills that are major sources of HAP. AP-42 and the associated Landfill Gas Emissions Model contain the accepted and approved emission factors and the best methods currently available for estimating landfill gas emissions.

The EPA is aware of the report submitted by the commenters. The EPA Emission Factor and Inventory Group, the EPA program responsible for AP-42 emission factors, is reviewing the report and technical data, and EPA is undertaking a landfill testing program to collect additional HAP data. There is very limited technical information about the difference in the decline of NMOC vs. methane and some of the information disagrees with the commenter's claims. There is also very limited data on any effects of cover design on emissions, but it is reasonable to assume that cover design does not change the total amount of gas and NMOC generated through the decomposition of waste in the landfill. When EPA updates the AP-42 chapter on landfill emissions, EPA will consider all relevant data. However, EPA's Emission Factor and Inventory Group could not complete their data collection and analysis prior to promulgation of the final landfills NESHAP.

The EPA used the current version of AP-42 in developing the landfills NESHAP. Any update of AP-42 or adjustment of calculation procedures would not affect EPA regulatory decisions in developing the landfills NESHAP. The EPA found that the MACT floor is the EG/NSPS level of control. This floor is based on the current level of control at major and synthetic area sources and would not change if there are somewhat fewer or more major sources than previously estimated.

Comment: Several commenters (IV-D-05, IV-D-08, IV-D-07, IV-D-02) disagree with determining whether a landfill is a major source by calculating uncontrolled emissions, because the EG/NSPS requires control. Two commenters (IV-D-05, IV-D-08) cited the definition of major source in the CAA and noted that the definition directs EPA to consider controls. Commenters (IV-D-02, IV-D-07) stated that because the EG/NSPS are Federal requirements, EPA must take into account the EG/NSPS control requirements before determining a landfill's potential to emit. Commenters (IV-D-05, IV-D-08, IV-D-07, IV-D-02) stated that EPA should estimate potential emissions after EG/NSPS control and compare that to the 10 tpy single HAP/ 25 tpy combination of HAP criteria to determine which landfills are major sources. Two commenters (IV-D-05, IV-D-08) understand that the proposed requirements are the same for both major and for select area sources, but the commenters stressed the importance to apply the proper designation to landfills, so that other rulemaking activities that may distinguish between major or area sources are implemented correctly. These two commenters (IV-D-05, IV-D-08) believe that if EPA does not properly designate major and area source landfills, there could be unnecessary landfill regulations in the future. One commenter (IV-D-02) attached a copy of a 1999 memo to EPA calculating that there are few major sources if EG/NSPS controls and Waste Industry Air Coalition HAP concentrations (see previous comment) are taken into account.

Response: The EPA agrees that when determining whether a landfill is a major source, there are relatively few landfills that would be considered major sources of HAP because most of the large landfills have Federally-enforceable controls required by the EG/NSPS and therefore emit less than 10 tpy individual HAP or 25 tpy combination of HAP. The preamble to the proposed rule may have led commenters to believe that EPA considers 1,140 landfills to be major sources of HAP: "We estimated that 1,140 facilities are, or will be, major sources of HAP." This statement is unclear. The EPA's intent was to state that based on estimates of maximum uncontrolled emissions, 1,140 landfills have potential emissions greater than 10 tpy individual HAP or 25 tpy combination of HAP. The EPA does not believe that actual landfill gas emissions from each of these 1,140 landfills exceeds 10 tpy individual HAP or 25 tpy combination of HAP, but in determining the MACT floor, EPA must consider maximum uncontrolled emissions from landfills.

In determining the MACT floor, the CAA requires EPA to identify the best-controlled sources in a category. The population of landfills that EPA used to determine the MACT floor was landfills with uncontrolled emissions greater than 10 tpy individual HAP or 25 tpy combination of HAP. This population includes both major and “synthetic area” sources. A synthetic area source is a source that would otherwise be a major source if not for emission controls that have been installed. Synthetic area sources have the same emission characteristics as major sources (i.e., size, waste composition, age), but are equipped with emission collection and control systems that have been demonstrated to be effective in reducing HAP emissions. Synthetic area sources were included in the MACT floor population because the feasibility of applying landfill controls is a function of the uncontrolled emission rate of landfill gas. To exclude these sources from the MACT floor determination would exclude some of the best-controlled sources in the industry. The CAA does not suggest that EPA should exclude a control technology from consideration in the MACT floor because it is so effective that it prevents a source from being a major source of HAP.

The EPA agrees that according to the definition of part 63 major source, Federally-enforceable controls must be considered when determining which sources are major sources for purposes of NESHAP applicability. However, even if a landfill were a major source of HAP under the landfills NESHAP, it would not necessarily be considered a major source for other rulemaking purposes. Rule applicability is defined independently for each regulation based on the thresholds in each regulation. Current and future rulemakings would not be affected by the designation of major sources under this rule.

The commenters are also correct in recognizing that the landfills NESHAP applies to area source as well as major source landfills that meet the EG/NSPS design capacity and NMOC emission rate criteria, so the distinction of whether a landfill is a major or area source does not impact the applicability of the landfills NESHAP or the requirements the landfill must meet under the landfills NESHAP.

Comment: Two commenters (IV-D-07, IV-D-02) stated that EPA changed the definition of major source (40 CFR 63.2) by using NMOC as a surrogate for HAPs. Two commenters (IV-D-07, IV-D-02) stated that using NMOC as a surrogate appears arbitrary and intended to make the NESHAP and EG/NSPS consistent. One commenter (IV-D-02) recommended that

EPA should reevaluate the need to make the two regulations consistent. Both commenters (IV-D-07, IV-D-02) stated that the existing definition of major source in 40 CFR 63.2 is clear and is not related to NMOC. The commenters (IV-D-07, IV-D-02) also stated that EPA has tools such as the landfill gas model and HAP emission factors to determine which landfills are likely to emit greater than the major source threshold of 10 tpy of any single HAP or 25 tpy of any combination of HAP, and should use these tools in its regulatory process. Both commenters (IV-D-07, IV-D-02) claim no data were presented to support the conclusion that landfills that exceed the 50 Mg/yr NMOC threshold are also emitting 10 tpy of any HAP or 25 tpy of combined HAP, but that in the proposed rule EPA considers landfills regulated under the EG/NSPS to be major sources. One commenter (IV-D-03) also stated that the proposal does not provide a link between the surrogate NMOC and the section 112 definition of major sources. The commenter (IV-D-03) stated that the distinction between major and area sources is not clear. The commenter (IV-D-03) believes that the definition of major source in the proposed landfills NESHAP conflicts with the definition of major source in section 111 of the CAA and the landfills NSPS. The commenter (IV-D-03) requested that EPA provide the definition of major source for the NESHAP.

Response: The commenters misunderstood EPA's intent in using NMOC as a surrogate for HAP. The EPA has not redefined "major source." The EPA continues to use the section 112 definition of major and area source (40 CFR 63.2) in the final NESHAP. Section 111 of the CAA and the landfills NSPS do not utilize the term "major source" inconsistently with section 112 of the CAA and the landfills NESHAP.

The EPA has not claimed that the 50 Mg/yr NMOC emission rate is used to determine whether a landfill is a major source for HAP emissions. Prior to proposal, EPA did, in fact, use AP-42 procedures as suggested by the commenter to determine HAP emission rates and whether landfills are major sources of HAP. The EPA used information in the landfill database on landfill characteristics such as acceptance rate, time since closure, and time since initial waste placement in combination with AP-42 default L_0 , k values and individual HAP concentrations from AP-42 to determine the maximum uncontrolled HAP emissions. Based on these calculations, EPA estimated that 1,140 landfills had emissions greater than 10 tpy of an individual HAP or 25 tpy of the combination of HAP, if the controls were not considered. These 1,140 landfills represent the

population of landfills that EPA used to determine the MACT floor. This population includes both major sources and synthetic area sources as described in the previous response. The EPA also calculated which landfills in the database are subject to EG/NSPS based on their design capacity and uncontrolled NMOC emission rate estimation procedures in the NSPS. Based on these calculations, EPA found all MSW landfills with uncontrolled emissions greater than 10 tpy of an individual HAP or 25 tpy total HAP also have a design capacity equal to or greater than 2.5 million Mg and 2.5 million m³ and have or will have an uncontrolled emission rate greater than 50 Mg/yr NMOC during their lifetime. These landfills will therefore, be required to install controls by the EG/NSPS. Thus, the MACT floor for major sources is the EG/NSPS level of control. These analyses are documented in memoranda entered into docket A-98-28 prior to proposal.

The EPA is also required to regulate area source landfills under section 112(k) of the CAA as part of the Urban Air Toxics Strategy. The EPA assessed area sources (including synthetic area sources as well as area sources with uncontrolled emissions less than 10 tpy of any individual HAP or 25 tpy total HAP) to determine GACT. As described in the proposal preamble, EPA found that for area sources with design capacities of 2.5 million Mg and 2.5 million m³ or more, and uncontrolled NMOC emission rates of 50 Mg NMOC/yr or more, GACT is equivalent to MACT. Because the EG/NSPS already requires control of these area sources, requiring GACT does not impose additional control requirements. The only additional burden imposed by the NESHAP are reporting requirements that better assure continuous compliance at a minimal cost. The EPA found that for landfills below these design capacity and NMOC emission rate criteria, GACT is no control based on consideration of emissions, cost, economic, and other factors as described in the proposal preamble (65 FR 66677).

The EPA does not expect that every landfill exceeding an uncontrolled emission rate of 50 Mg/yr NMOC is also a major source of HAP. Some landfills exceeding 50 Mg/yr NMOC are natural area sources whose uncontrolled HAP emissions would be less than 10 tpy individual HAP or 25 tpy total HAP. Others are synthetic area sources because of their use of the EG/NSPS collection and control system to control NMOC, actions that also control HAP to below 10 tpy individual HAP or 25 tpy of total HAP. Having an uncontrolled emission rate greater than 50 Mg NMOC does not make a landfill a major source of HAP.

For determining whether a landfill must apply controls and demonstrate control performance, the rule relies on the surrogate of landfill gas measured as NMOC, rather than HAP. This use of NMOC as surrogate for HAP minimizes the burden on owners/operators because NMOC is easier to measure than individual or total HAP. NMOC is an appropriate surrogate for HAP because all HAP are contained in the NMOC portion of landfill gas. Control of NMOC to meet the EG/NSPS requirements ensures destruction of organic HAP. Landfill owners/operators are already required to estimate NMOC under the EG/NSPS and it is not necessary to increase the burden by requiring specific HAP measurements as well.

6.0 SSM PLAN AND MONITORING REQUIREMENTS

Comment: Two commenters (IV-D-02, IV-D-07) requested that EPA clarify the difference between a deviation from the SSM plan and a violation of the standard. Both commenters (IV-D-02, IV-D-07) suggested that it is difficult to predict how to address a deviation from a regulatory requirement prior to the deviation actually occurring. The commenters (IV-D-02, IV-D-07) stated that it is not unusual for an issue to arise that was not originally considered in the SSM plan. The commenters (IV-D-02, IV-D-07) recommended that any such issue, if addressed expeditiously according to the NESHAP requirements, should be considered merely a deviation from the SSM plan, and not a violation of the standard. (See also comments in Chapter 11 on title V.)

Response: The EPA agrees that it is difficult to predict deviations. However, owners/operators should read the requirements of the NESHAP and determine to the best of their ability which malfunctions could prevent them from complying with the regulation. The EPA believes that most causes of deviations are foreseeable for owners/operators. The owner/operator must develop and follow the SSM plan according to the landfills NESHAP and the general provisions. According to table 1 of subpart AAAA and §§63.6(e) and 63.10(d)(5) of Subpart A, any time an action taken during a SSM is not consistent with the SSM plan, the source shall report actions taken within 2 working days after commencing such actions, followed by a letter 7 days after the event. If a malfunction event occurs that is not addressed in the SSM plan, the SSM plan must be revised within 45 days.

Comment: One commenter (IV-D-03) stated that the term “deviation” as used in §63.1960 is not a deviation, but a violation. The commenter (IV-D-03) also stated that in §63.1970, the Administrator is given the authority to determine whether failures in implementing

a SSM plan are violations, but this section does not give the Administrator authority to excuse failures in SSM plan development.

Response: “Deviation” as used in the landfills NESHAP is described in §§63.1960 and 63.1965 and defined in §63.1990. A deviation can occur when the control device operating parameter boundaries are exceeded or when the source is out of compliance with other requirements of the rule. All deviations must be reported. When a deviation occurs, the enforcement authority will determine whether the source is out of compliance with the NESHAP.

In response to this comment and other comments in Chapter 11, §63.1970 has been removed from the final NESHAP to eliminate any confusion regarding the use of SSM plans. Given that the revisions to the general provisions for part 63 (67 FR 16582, April 5, 2002) included revisions to 40 CFR 63.6(e), a subsection which addresses SSM plans, and given the other language in the general provisions for parts 60 and 63 relevant to this topic, EPA does not believe a regulatory section regarding the use of SSM plans is needed in the final NESHAP.

Comment: Two commenters (IV-D-08, IV-D-05) requested that EPA provide a definition of “malfunction” as it specifically relates to landfill operations. Both commenters (IV-D-08, IV-D-05) recommended that EPA provide examples and a detailed explanation of where the definition would apply. The commenters (IV-D-08, IV-D-05) believe that a malfunction is a situation where equipment is not operating to the extent that a deviation from a standard occurs. The commenters (IV-D-08, IV-D-05) specifically requested clarification on whether an exceedance of the 500 parts per million (ppm) surface gas standard would constitute a malfunction under the SSM plan. The commenters (IV-D-08, IV-D-05) questioned whether an SSM plan would be needed since the EG/NSPS already details corrective actions for surface gas concentration.

Response: The EPA believes that the definition of malfunction in 40 CFR part 63 is adequate and appropriate for landfills: "Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions." Routing gas to a control device is a typical requirement of NESHAP. The EPA expects that owners/operators of landfills can determine malfunctions (using the part 63 definition) in much the same way as owners/operators of similarly controlled

sources. The EPA did not include a landfill-specific definition of malfunction in the final NESHAP.

The EPA does not consider an exceedance of the 500 ppm surface gas standard a malfunction under the SSM plan. Because the NSPS specifies the method, schedule, and corrective actions in case of an exceedance, it would not be necessary to include an exceedance of the surface gas concentration in the SSM plan.

Comment: One commenter (IV-D-06) congratulated EPA in proposing modest improvements over the EG/NSPS monitoring requirements. However, the commenter (IV-D-06) stated that in spite of EPA's position that continuous emission monitoring systems (CEMS) are not appropriate for MSW landfill sources, CEMS vendors are confident that systems could be applied and work reliably on MSW landfill sources.

Response: The commenter did not provide any details about which pollutants or what type of CEMS could be applied to landfills. The cost of CEMS is higher than the cost of parameter monitoring, and CEMS have not been sufficiently demonstrated for many HAPs. The landfills NESHAP requires parameter monitoring instead of CEMS. When monitoring options other than CEMS are considered, EPA balances more reasonable costs against the feasibility, quality and accuracy of actual emissions monitoring data. Although monitoring of operating parameters does not provide a direct measurement of landfill emissions, it is suitable as a substitute for CEMS. The selected monitoring parameters ensure that the control equipment is operating properly. This information reasonably assures EPA and the public that the reductions envisioned by the NESHAP are being achieved.

7.0 HEALTH EFFECTS

Comment: Two commenters (IV-D-05, IV-D-08) are concerned that the preamble to the proposed rule leaves the impression that at the very least, a “mild” health impact will be experienced from human exposure to landfills. The commenters (IV-D-05, IV-D-08) agree that the toxic compounds addressed in the preamble could, under appropriate exposures, cause a health impact. However, the commenters (IV-D-05, IV-D-08) state that a well-operated, modern sanitary landfill will have no adverse health impact on the public. One commenter (IV-D-08) cited a California monitoring program. The commenter (IV-D-08) is not aware of any landfill under the program that has detected toxic compounds in the environment above ambient levels. The commenters (IV-D-05, IV-D-08) requested that EPA modify the preamble to clarify this issue.

Response: The EPA recognizes that health risks are significantly reduced at sites that operate gas collection and control systems meeting the specification in the EG/NSPS. However, not all landfills collect and control landfill gas. Also, some gas collection and control systems do not operate effectively. At such sites, health risks would be higher. The EPA considers the promulgation preamble language to accurately convey the health risks associated with landfills.

8.0 PETROLEUM CONTAMINATED SOIL

Comment: Three commenters (IV-D-07, IV-D-05, IV-D-02) agreed with EPA that petroleum contaminated soil (PCS) is not a MSW landfill issue and should not be addressed in the MSW landfill MACT rulemaking. They agreed the proposal of no control for landfills is appropriate. Two of the commenters (IV-D-07, IV-D-02) cited emission data from MSW landfills that showed PCS to be a minor source of HAP. The commenters (IV-D-07, IV-D-02) specifically mentioned surface emissions monitoring performed under the EG/NSPS and the South Coast Air Quality Measurement District rule 1150.1, which have not shown significant increases in total organic emission where PCS were used as landfill cover. The commenters (IV-D-07, IV-D-02) also reported that surface emissions monitoring of PCS storage piles at landfills have not shown significant emissions. All three commenters (IV-D-07, IV-D-05, IV-D-02) agree with EPA that PCS disposal at MSW landfills will decline substantially in the future, as the Underground Tank program becomes less active. One commenter (IV-D-07) stated that because the highest potential for air emissions from PCS disposal occur during its excavation, handling, and storage, air emissions from PCS should be evaluated in the context of a future MACT regulating site remediation activities.

Response: The EPA agrees with the commenters. Based on current emissions and controls information on PCS used as a cover material at landfills, EPA does not consider this a landfill issue. It appears that most PCS used at landfills is obtained from excavation and remediation of underground storage tanks. The number of tanks being excavated is declining and in many instances, States are allowing PCS to be returned to the excavation site. For these reasons, PCS used at landfills is declining. Also, evidence indicates that the majority of air emissions from PCS occur during excavation, storage, and transport prior to entering the landfill.

The EPA plans to evaluate PCS in the context of a future MACT standard for site remediation activities.

9.0 MERCURY

Comment: Four commenters (IV-D-08, IV-D-07, IV-D-05, IV-D-02) reported that they are not aware of any reliable data showing mercury as a significant emission from MSW landfills. The commenters (IV-D-08, IV-D-07, IV-D-05, IV-D-02) referred to a detailed test program of flaring stations at Fresh Kills Landfill, New York, which measured low levels of mercury emissions. They indicated that other tests have also shown low levels (but did not give specific references.) Two commenters (IV-D-08, IV-D-05) stated that regulatory authorities have determined that documented mercury releases from landfills were insignificant. The commenters (IV-D-08, IV-D-07, IV-D-08, IV-D-02) suggested that ultimately the solution to controlling mercury releases from landfills is the management of mercury in the waste stream, not regulation of landfills.

Response: Prior to proposal, EPA considered data from a number of studies, including one conducted at Fresh Kills Landfill in New York. The EPA found insufficient data to adequately characterize the concentrations of mercury in landfill gas, the emissions of mercury in fugitive landfill gas and in residuals from landfill gas combustion devices, or to determine their significance. Because there are no control devices, pollution prevention practices, or other techniques available to landfills to reduce mercury emissions, and based on available information, EPA concluded that the MACT floor for mercury control is no emission reduction. Because there are no alternatives above that floor, the MACT standard is also no reduction in emissions. Currently there is no method for completely destroying mercury, therefore, the best method for keeping it from entering the environment is to avoid the use of mercury in products that will eventually enter the MSW stream. However, it should be considered that once mercury has been created, the next best method of control may be disposal in a modern, lined landfill that combusts

the generated gas in accordance with the EG/NSPS. In this case, the mercury is converted to a less hazardous, inorganic form through the combustion process.

Comment: Two commenters (IV-D-07, IV-D-02) support the cooperative efforts of EPA and the Environmental Research and Education Foundation to test raw landfill gas and emissions from gas combustion equipment for HAP metals such as mercury and dioxin/furan. One of the commenters (IV-D-07) recommended that EPA wait until the project is completed before it makes any decision on mercury controls and therefore, a MACT standard for mercury in landfills should not be included in the current rulemaking.

Response: The EPA thanks the commenters for their support of the ongoing research efforts. As stated in the proposal preamble, EPA found the available data insufficient for specific characterization of the concentrations of mercury in landfill gas, the emissions of mercury in fugitive landfill gas and in residuals from landfill gas combustion devices. Furthermore, as described in a later response, EPA has not identified any control alternatives that would reduce mercury emissions. The EPA is promulgating the rulemaking without a mercury emission limit rather than delaying the current rulemaking. However, section 112(f) of the CAA requires that EPA evaluate residual risks and promulgate standards to address residual risks within 8 years of promulgation of the NESHAP. Also, section 112(d)(6) requires review of the NESHAP every 8 years. If the study results suggest a different approach would be more appropriate, the landfills NESHAP could be amended at that time.

Comment: One commenter (IV-D-01, IV-G-01) reported that data for mercury air emissions from three MSW landfills are currently under review by the NJ Mercury Task Force. These data are included in a draft report from the NJ Mercury Task Force (IV-G-01).

Response: The New Jersey data included an average mercury concentration of 7.5 micrograms per m³ of landfill gas (9.1×10^{-4} ppm) from a series of stack tests performed at the three landfills including Fresh Kills, New York. The New Jersey report also referred to an emission factor of 2.9×10^{-4} ppm from a 1997 EPA report. These data were similar to those reported in a March 5, 1999 memo summarizing available information regarding emissions of mercury from MSW landfills. This memo gave numbers in the range of 7.0×10^{-7} ppm to 8.8×10^{-4} ppm, which were compiled from nine landfills. Because the NJ emissions information is

similar, it does not alter EPA's decision to promulgate the NESHAP without a mercury emission limit.

Comment: One commenter (IV-D-06) noted that while EPA acknowledges that landfills are a common repository for mercury wastes, and mercury is emitted from MSW landfills, these emissions are not controlled by EG/NSPS control technologies, and the MACT floor for metal HAP emissions is no control due to lack of experience in the control of these emissions at landfills. The commenter (IV-D-06) requested that EPA retain the opportunity to address control of mercury at landfills. The commenter (IV-D-06) asked that EPA clarify the level of mercury air emissions from MSW landfill gases. The commenter (IV-D-06) also stated that the MACT floor is the minimum level of control allowed and that EPA must investigate beyond-the-floor control options, including the transfer of technologies from other sources.

Response: Low levels of mercury are contained in MSW, in diverse items such as thermometers, batteries, light switches, thermostats, and fluorescent lights. Some mercury in the waste stream is emitted before the waste arrives at landfills. The mercury volatilizes as mercury-containing items break during waste collection, compaction, and transport. Mercury is also emitted from waste deposited on the landfill surface for burial, and is present in landfill gas.

The EPA examined potential mercury control and pollution prevention techniques. The only control device available to landfills is combustion, however, combustion only changes the form of the mercury being released to a less toxic form. It does not remove mercury from the landfill gas. There are no pollution prevention practices for mercury control that landfills could implement. Once MSW arrives at a landfill, there are no feasible pollution prevention practices that can reduce mercury emissions from the landfill. It is not possible to separate a mixed waste stream to remove and recycle small items such as household batteries, thermometers, switches, and fluorescent lights, many of which may have already broken and released mercury during waste collection and transport before reaching the landfill. Landfills already have random inspections of waste to help ensure that hazardous waste (which can contain high levels of mercury and is regulated under RCRA rules) is not illegally placed in MSW landfills. The only real possibility for pollution prevention that could reduce mercury emissions from MSW landfills is to reduce the amount of mercury contained in household products that will eventually enter the solid waste

stream. (In fact, due to economic factors and environmental concerns, the levels of mercury contained in items such as batteries has declined over the past several years.)

Because there are no control devices, pollution prevention practices, or other techniques available to landfills to reduce mercury emissions, EPA found that the MACT floor for new and existing landfills is no reduction in mercury emissions. For the same reasons, EPA has not identified any beyond-the-floor control options that could be implemented at landfills to reduce mercury emissions. Therefore, no mercury emissions reductions are required at this time, and the promulgated rule does not contain emission limitations for mercury. However, section 112(f) of the CAA requires that EPA evaluate residual risks and promulgate standards to address residual risks within 8 years of promulgation of the NESHAP. Also, section 112(d) requires review of the NESHAP every 8 years. If additional information on mercury emissions and control techniques that would alter this decision becomes available in the future, EPA could amend the rule at that time.

Comment: Two commenters (IV-D-05, IV-D-08) responded to the citation in the preamble to the proposed rule of a study that suggested fugitive emission of mercury from the landfill, as well as mercury emissions from the landfill working face were measured. Both commenters (IV-D-05, IV-D-08) agreed with the authors of the study that background soils may contribute to the emissions measured. The commenters (IV-D-05, IV-D-08) also raised the possibility in discussion with the authors that measurements at the working face could be impacted by trace mercury present in the diesel exhaust of landfill mobile equipment. The commenters (IV-D-05, IV-D-08) stated that due to these confounding factors, it is hard to draw conclusions from this study, and agreed with EPA's proposal not to regulate mercury emissions.

Response: The EPA contacted the study authors, who responded that they tested the diesel exhaust of landfill vehicles and found no mercury, even at distances of 10 to 20 feet, as compared to tests done on the landfill working face where mercury could be detected at distances of several hundred feet. One author noted that potential sources of the mercury appeared to include ocean sediments deposited along with scallop wastes (rather than background soils), and possibly broken light bulbs. She stressed that the landfill was not a major source of mercury and that the mercury was not detected once the working face was covered.

The other author disagreed with the statement made by the commenter that confounding factors made the study conclusions problematic. He mentioned that he has conducted mercury testing at three more landfills since the study mentioned, bringing the total number of landfills tested to six. The emission numbers have been very similar for all six landfills.

The EPA reviewed this mercury emission study prior to proposal, and for reasons stated in the preamble and in other responses in this chapter, decided not to develop a mercury emission limit for MSW landfills. The comments do not provide any new information that would change the decision.

10.0 BIOREACTORS

Comment: Three commenters (IV-D-05, IV-D-07, IV-D-02) considered existing bioreactor information to be insufficient for development of specific regulations. All three commenters stated that bioreactors are still in the developmental stage and full-scale bioreactor projects need a few more years to generate data before any changes to existing EG/NSPS regulations or NESHAP development with respect to bioreactors can be determined. One commenter (IV-D-05) planned to work with its members and EPA to research the new technology and help develop regulations, as appropriate. One commenter (IV-D-02) attached a letter discussing major source landfills after implementation of EG/NSPS for Municipal Solid Waste Landfills, a paper comparing emissions from bioreactors and conventional subtitle D landfills, and excerpts from comments to EPA regarding changes in air emissions, greenhouse gas emissions and methane recovery potential at bioreactor landfills.

Three commenters (IV-D-07, IV-D-02, IV-L-06) recommended that EPA provide interim technical guidance until more complete bioreactor information becomes available. One commenter (IV-D-07) suggested that EPA review the data received in response to the April 6, 2000 request for bioreactor information in the Federal Register and base technical guidance to States and the regulated community on the data. One commenter (IV-D-02) stated that the technical guidance could include direction to States and owners/operators to encourage bioreactors to install gas collection systems in the early stages of a project due to the rapid generation of landfill gas in significant quantities. Another commenter (IV-D-05) also encouraged developers of bioreactors to install gas collection systems early.

Response: Since these comments were made, EPA has gathered additional information on the number of bioreactors, their control levels, and the timing of collection and control system installation. This information was presented in the supplemental proposal for bioreactors (67 FR

36460, May 23, 2002). The EPA has concluded that the design and operation of bioreactors is different from conventional landfills, resulting in rapid biodegradation of the waste and significantly higher emission rates than conventional landfills prior to and shortly after closure. The appropriate timing of control for bioreactors is, therefore, different from other landfills. In the MACT floor analysis to support the supplemental proposal, EPA found that 10 of 24 bioreactors have control systems meeting the EG/NSPS requirements and at least 5 of these installed controls prior to the initiation of liquids addition and sooner than required by the EG/NSPS. Based on these findings and the rationale expressed in the supplemental proposal and promulgation preambles, EPA is defining bioreactors and requiring timely control for bioreactors located at MSW landfills with a design capacity greater than or equal to 2.5 million Mg and 2.5 million m³.

The commenters suggest providing guidance instead of a regulation. These requirements are being promulgated as a rule under section 112 of the CAA. Under section 112(d), EPA is required to regulate major sources of HAP, including MSW landfills. The EPA is also authorized to regulate listed area sources, and landfills were one of the area source categories of HAP emissions listed under section 112(k) of the CAA on July 19, 1999. Section 112 requires regulation of HAP emissions sources and EPA is not aware of, nor did commenters identify, any mechanism for guidance directing states or owners/operators to control bioreactor landfills in a timely manner. The EPA is required to develop uniform National regulations. Moreover, EPA does not see any need to not require timely control for bioreactors.

Comment: One commenter (IV-D-10 and IV-L-02) specifically suggested that EPA should require all bioreactor landfills to install gas collection and controls prior to commencing bioreactor operations. The commenter (IV-D-10) reported that experience with gas collection and control systems in California, Delaware and New York indicate that the systems are effective in controlling odors and landfill gas emissions from conventional and bioreactor landfills. The commenter (IV-D-10) attached a letter written in response to the April 6, 2000 Federal Register notice, "Alternative Liner Performance, Leachate Recirculation, and Bioreactor Landfills; Request for Information and Data" (65 FR 18014) regarding the collective experience of the ASTSWMO Bioreactor Landfill Work Group with bioreactor landfill operations across the country.

In a later letter, the commenter (IV-L-02) pointed out that the potential exists for bioreactor landfills smaller than 2.5 million Mg or 2.5 million m³ to generate significant air emissions that warrant timely installation of gas collection and control systems. The commenter (IV-L-02) expressed concern that many States would need to enforce timely installation of gas collection and controls at these smaller bioreactor landfills, especially those located in moist climates, in an effort to ensure adequate compliance with State solid waste management regulations for odor and emissions. The commenter (IV-L-02) recommended requiring control of bioreactors at landfills with design capacities less than 2.5 million Mg or 2.5 million m³.

Response: The EPA is not requiring control at small area source bioreactor landfills, for the same reasons that the NESHAP does not regulate small conventional landfills. In determining GACT for small area sources, EPA found that while bioreactors generate larger amounts of landfill gas early in their life, it is expected that their lifetime total landfill gas generation potential would not be significantly greater than a conventional landfill accepting the same total amount of waste. Therefore, potential emissions reductions from control of bioreactors would be similar to potential long-term emissions reductions from control of small conventional landfills. Requiring bioreactors at small landfills (i.e., landfills with design capacities less than 2.5 million Mg or 2.5 million m³) to install controls would result in additional and unreasonable control costs because they are not required to install controls by the EG/NSPS. The design capacity exemption excludes those landfills that can least afford the costs of collection and control systems including small businesses and particularly, municipalities. Also, controlling smaller landfills would greatly increase the number of landfills subject to control and result in large control costs relative to the potential emissions reductions (based on analysis conducted during the development of the EG/NSPS). Other reasons for exempting small landfills are described in the proposed landfills NESHAP (65 FR 66677, November 7, 2000) and they also apply to bioreactors. State, local and tribal agencies may develop more stringent regulations for small bioreactor landfills in cases where odor and emissions are of local concern.

Comment: One commenter (IV-D-10) stated that it is inappropriate to increase the methane generation rate constant, "k", for bioreactors and use it to calculate whether bioreactor emissions exceed 50 Mg before requiring controls. The commenter (IV-D-10) suggested that it is possible that use of a bioreactor "k" value to determine NMOC thresholds could be used to delay

or argue against landfill gas emission controls for individual bioreactor landfill projects. The commenter (IV-D-10) stated that because of their enhanced rate of landfill gas generation, bioreactors should be required to collect and control landfill gas emissions prior to the start of operation. The commenter was also concerned that conventional landfills smaller than 2.5 million Mg are not required to calculate NMOC emissions or apply controls, but that bioreactors smaller than 2.5 million Mg could emit more than conventional landfills of this size. Therefore, the commenter (IV-D-10) does not believe that use of the 2.5 million Mg waste capacity and 50 Mg per year NMOC thresholds or modifying “k” values are appropriate for application to bioreactor landfills.

Response: The EPA believes that there is insufficient data to develop a new “k” value for bioreactors. Although more data will be available in the future, significant new data was not available in time to be used in this rulemaking. As described in the supplemental proposal, EPA has chosen an approach to bioreactor control that does not require a k value or an emissions calculation. Instead, if a landfill exceeds the design capacity criteria and operates a bioreactor (as defined by liquids addition and the 40 percent moisture criteria) timely control is required.

With regard to the commenter’s concern that bioreactors under 2.5 million Mg could emit more than conventional landfills of the same size, EPA agrees that the emission rate will be higher in the short term, but the lifelong potential to emit is unlikely to vary significantly between the two landfill types. In determining GACT for area source landfills, EPA found that it is reasonable that the EG/NSPS requirements should apply according to the same landfill design capacity thresholds for conventional and bioreactor landfills. This finding is based on the similarity in the total amount of emissions and on the cost and other considerations described in the previous response. As stated in previous responses, EPA is requiring timely control of landfill gas for bioreactors at landfills with design capacities greater than or equal to 2.5 million Mg and 2.5 million m³.

Comment: One commenter (IV-D-06) noted that EPA estimates that the NESHAP will affect more than 1,000 of the existing 10,000 landfills, based on typical HAP emissions produced by conventional landfills. Also, EPA indicates that the rapid generation of landfill gas from bioreactor operations may not conform to the proposed NESHAP or EG/NSPS requirements. Based on this information, the commenter (IV-D-06) stated that the thresholds for affected bioreactors may need to be modified and greater capture and venting to a control device may be

necessary. The commenter (IV-D-06) also stated that at a minimum, requirements for bioreactor operations should be included to ensure full compliance and use of control devices.

Response: As stated in previous responses, EPA is requiring timely control of landfill gas for bioreactors at landfills with design capacities greater than or equal to 2.5 million Mg and 2.5 million m³.

Comment: One commenter (IV-D-10) stated that the suggestion given in the proposal preamble that final caps be placed on a landfill prior to adding liquids conflicts with the two major benefits to bioreactor landfill operations. The benefits of gaining additional landfill capacity due to accelerated waste settlement and the disposal of leachate by recirculation would not be possible with a final cap in place. The commenter (IV-D-10) also stated that if settlement occurred quickly after liquid addition, it would be preferable for the settlement to occur before the final cover system was installed.

Response: The EPA has not included this requirement in the final landfills NESHAP. The EPA would like to point out that bioreactors at Yolo County landfill in California, as well as multiple New Jersey sites, don't begin recirculating leachate until a final cap has been placed. These sites recirculate below the surface. Sites utilizing final caps prior to recirculation have the most environmentally protective bioreactor operations achievable. The EPA does not require placement of final caps before recirculation, but does recommend the practice for sites wishing to attain high levels of environmental protection while utilizing bioreactor technology. However, as long as gas is being efficiently collected and controlled from the areas where leachate recirculation is occurring, according to the collection and control system requirements in the EG/NSPS, the landfill will be in compliance with the rule.

Comment: One commenter (IV-D-10) addressed the negative tone with respect to bioreactor landfill operations of EPA's rulemaking preamble. The commenter (IV-D-10) believes that the preamble text concerning the health impacts, the threat of landfill fires and pollution potential of bioreactor landfills can be perceived as being overly negative. The commenter (IV-D-10) stated that, when operated under proper direction, bioreactor landfills pose no more harm to public health and the environment than a conventional landfill. The commenter also noted that the potential for landfill fires exists with the current regulations for conventional landfills and is not an issue for bioreactors alone. The commenter (IV-D-10) suggested that the

preamble be modified to include the positive attributes which bioreactor landfills may offer compared to conventional landfills, using the following information:

- increased efficiency in collection and control of landfill fugitive gases, resulting in reduced air emissions;
- reduction in greenhouse gas emissions;
- potential market for beneficial use of wastewater and sludge;
- potential landfill mining and beneficial use of stabilized residual wastes; and
- improved economy and revenue as a result of more efficient utilization of biogas energy than in conventional landfills.

Response: The EPA did not intend the preamble to address bioreactors in a negative manner. The EPA recognizes that a bioreactors may offer benefits such as reduced landfill space and that if bioreactors are controlled from near the start of their operation this will result in a decrease in air emissions.

Comment: Five commenters (IV-L-01, IV-L-02, IV-L-03, IV-L-05, IV-L-07) generally supported EPA's approach for the application of NESHAP to landfills operating as bioreactors and the requirement of timely collection and control of emissions from bioreactor landfills. One commenter (IV-L-02) stated that the bioreactor requirements could help to motivate future proposed amendments to current RCRA regulations (40 CFR part 258) which would allow liquids addition other than leachate to bioreactor landfills, thus advancing this innovative landfill operational technology nationwide. One commenter (IV-L-07) expects bioreactor landfills to improve the efficiency of landfill gas emission control and promote greater use of landfill gas for energy recovery.

One commenter (IV-L-06) who opposed the proposed rulemaking believes that existing information of emissions from bioreactor landfills is insufficient for the development of MACT standards. The commenter (IV-L-06) contended that bioreactor landfills are currently in the developmental stage. The commenter (IV-L-06) suggested that EPA defer any regulatory decisions on the air emissions from bioreactor landfills until new data or a better understanding of bioreactor landfill emissions become available. Another commenter (IV-L-04) who opposed the proposed rule recommended, in lieu of the rule, giving States latitude as to when to require early installation of gas collection and control systems for all bioreactors, regardless of size or waste mass moisture content. Due to the fact that information and data on bioreactor landfill air emissions are only beginning to be collected, the commenter (IV-L-04) suggested that EPA

provide guidelines for bioreactor landfills that could be used by States to make site-specific judgements.

Response: Bioreactors result in more rapid biodegradation of waste and higher emissions than conventional landfills shortly after waste placement. Recent literature suggests that a bioreactor cell can very quickly (within about 90 to 180 days of operation) reach the same gas generation rate as a conventional landfill cell does in 2 years of operation. Through available data, EPA was able to identify 24 anaerobic bioreactors, 10 of which have gas collection and control systems meeting the control levels of the EG/NSPS. At least five of these controlled bioreactors had control systems installed or will have them installed prior to initiating liquids addition to the bioreactors and sooner than required by the EG/NSPS. Based on this information, EPA contends that a substantial amount of data are available to support regulations requiring timely collection and control of emissions from bioreactor landfills. Any delay in the promulgation of this rule will result in the undue release of additional HAP from bioreactor landfills. As explained in the response to the first comment in this chapter, EPA is required by section 112 of the CAA to develop uniform National standards. The EPA is not aware of, nor did the commenter identify, any mechanisms for guidance directing States or owners/operators to control bioreactors in a timely manner.

Comment: Three commenters (IV-L-03, IV-L-06, IV-L-07) expressed concern that due to a wide range of possible development scenarios, commencing operation of the gas collection and control system within 90 days of liquids addition may not be appropriate in all cases. Two commenters (IV-L-06, IV-L-07) stated that the generation rates of landfill gas during the initial development phases of bioreactors are a function of many factors and substantial quantities of recoverable landfill gas may not be available due to low waste acceptance rates, hybrid bioreactor operations, high inorganic waste fractions, or low liquid addition rates where gas generation is likely to be similar to that of conventional landfills. Under these circumstances, premature startup of the gas control system may result in significant volumes of air being introduced into the bioreactor, thus killing methane-producing bacteria. Both commenters (IV-L-06, IV-L-07) acknowledged that these factors would not be as much of a concern if it was clarified in the rule that operation of the collection and control system must begin 90 days after 40 percent moisture content is reached. All three commenters (IV-L-03, IV-L-06, IV-L-07) recommended extending

the startup time frame to 180 days or establishing a process for waiving or delaying the startup date if local conditions warrant.

Response: In response to this comment, EPA has changed the final NESHAP to allow 180 days instead of 90 days to begin operation of the collection and control system. The EPA is aware that bioreactors may experience variable emission rates upon start up due to site-specific factors such as those described by the commenters. Furthermore, gas collection systems for bioreactors are site-specific and are likely to use newer designs, so operators may require time to gain experience and make operational adjustments to their systems. The 180 day period will allow time to landfill operators to adjust their collection systems such that they can achieve continuous, stable collection and control system operation.

Comment: Four commenters (IV-L-03, IV-L-04, IV-L-06, IV-L-07) requested clarification as to whether the rule was meant to require the operation of the gas collection and control system within 90 days after the initial liquid addition or within 90 days after the moisture content has reached 40 percent. The commenters (IV-L-03, IV-L-04, IV-L-06, IV-L-07) stated that they believed EPA's intent was to require operation of the gas collection and control system after the moisture content reached 40 percent. The commenters (IV-L-03, IV-L-04, IV-L-06, IV-L-07) noted that it may take longer than 90 days of liquids addition to reach a moisture content of 40 percent.

Response: The commenters are correct, it was EPA's intent that attaining 40 percent moisture triggers the operation of the control system, and not merely the introduction of liquids. If operation of the control system is based on the time of liquids addition and the landfill has not reached 40 percent moisture content within 90 days, then the rule (as proposed) would be requiring collection and control to be installed and operated prior to the landfill meeting the definition of a bioreactor. The EPA has revised the rule to clarify that the operation of the collection and control system is required within 180 days after the landfill starts liquids addition or within 180 days after the date the bioreactor has first reached 40 percent moisture content (i.e., 180 days after the landfill has met the definition of bioreactor), whichever is later. Landfills must use the procedures in §63.1980(g) and (h) to determine when 40 percent moisture content is reached. (No calculation is needed if the landfill begins operating the collection and control

system within 180 days after the initial liquids addition.) Installation of the collection and control system is still required prior to liquids addition, as required in the supplemental proposal.

Comment: Two commenters (IV-L-02, IV-L-06) believe that prescribing a target waste mass moisture content of 40 percent in the definition of bioreactor is not supported by scientific data. One of the commenters (IV-L-02) stated that the only significance of the 40 percent moisture content referenced in the supplemental proposal is that it represents the lower bounds of the moisture content range of 40 to 70 percent recommended in literature for achieving optimum waste mass decomposition. The commenter (IV-L-02) suggested that EPA remove the 40 percent moisture content threshold from the bioreactor definition for two reasons. First, they claimed that its removal would minimize sampling requirements for the waste mass moisture content. Second, removing the 40 percent moisture criteria would allow latitude for States to require early installation of controls without needing to have attained the 40 percent moisture threshold where there are local emissions and odor concerns. Although the commenter (IV-L-02) does not want the 40 percent moisture content to be included in the bioreactor definition, the commenter (IV-L-02) understands the importance of a bioreactor landfill needing to attain an optimum moisture content for enhanced waste mass decomposition. The commenter (IV-L-02) suggested discussing the optimum moisture content range (40 to 70 percent) as guidance in the preamble. One commenter (IV-L-06) pointed out that few MSW landfills have collected data correlating the amount of liquids added and recirculated with the rate, quantity, and quality of landfill gas emissions. The commenter (IV-L-06) expressed concern that selecting a trigger level of 40 percent moisture content is arbitrary and not supported by research data. The commenter (IV-L-06) stated that without scientifically valid data, an appropriate moisture content threshold cannot be selected or defended based on the amount of gas that may be generated and potentially captured.

One commenter (IV-L-07) supports the 40 percent moisture content proposed because the developing science on bioreactors supports this threshold. The commenter (IV-L-07) explained that one study sited 50 to 70 percent moisture content as ideal for bioreactors. The commenter (IV-L-07) contended that a lower number than the optimal, but one that represents a moisture content likely to accelerate gas production, is an appropriate threshold for EPA to choose. The commenter (IV-L-07) stated that in order to justify accelerated collection and control systems at

bioreactor landfills, EPA must establish that moisture conditions will be substantially in excess of those found in conventional landfills. The commenter (IV-L-07) believes a 40 percent moisture content cutoff for bioreactors provides the necessary distinction between substantially higher moisture conditions in bioreactor landfills and moisture contents of 10 to 35 percent found in conventional landfills. The commenter (IV-L-07) added that a 40 percent moisture content threshold would require bioreactor landfills in non-arid climates to be controlled as bioreactors while allowing landfills in arid climates that add liquids but do not reach 40 percent moisture and have emissions comparable to conventional landfills, to use existing NESHAP and EG/NSPS requirements as an adequate level of control.

Response: It is necessary to establish a clear definition of bioreactor to determine when the early installation and operation of a collection and control system applies. Including a percent moisture content in the definition provides a measurable parameter that can be used to determine applicability. Section 112 requires EPA to set uniform National standards. Definitions, applicability criteria, and control requirements must be clearly stated and cannot be left to State discretion. Section 112 does not provide a mechanism for issuing guidance instead of a uniform National standard. The EPA based the selection of 40 percent moisture content on the best available data on bioreactors. The EPA agrees with commenter IV-L-07 that the available scientific information supports this threshold. The literature suggests that moisture content of the waste should remain in the range of 40 to 70 percent to optimize bioreactor operations. It seems clear that once the moisture content is at least 40 percent, landfill gas will be generated at levels significantly greater than a conventional landfill. Under State or local regulatory authority, a State, local or tribal agency may require early control for areas with less than 40 percent moisture if it is necessary to address local concerns.

The 40 percent moisture criteria will not require burdensome sampling. The EPA expects that most landfills that add liquids other than leachate will meet the definition of a bioreactor. If the landfill owner/operator complies with the bioreactor control requirements, they are not required to measure or calculate waste moisture content. Only those landfills that add liquids but do not install control systems or do not begin operating their controls within 180 days after liquids addition must determine their moisture content to show that it is less than 40 percent. The regulation allows landfills to use site-specific procedures to determine moisture content rather

than presenting one specific method. It clarifies that mass balance calculations can be used. Landfills are not required to perform extensive in-situ waste mass moisture measurements.

Comment: The EPA received five comments pertaining to the exclusion of landfills that recirculate leachate and do not add any other liquids from the definition of a bioreactor landfill. Three commenters (IV-L-02, IV-L-03, IV-L-07) who supported the exclusion stated that liquids addition other than that provided by leachate recirculation is normally needed to achieve optimum moisture for bioreactors. One of these commenters (IV-L-07) stated that including liquids other than leachate in the bioreactor definition distinguishes between conventional landfills that recirculate leachate for the primary purpose of leachate management and bioreactor landfills that introduce liquids to achieve optimal levels of biodegradation and gas generation.

One commenter (IV-L-04) who opposed the exclusion and one of the commenters (IV-L-02) who supported the exclusion contended that a landfill in a relatively moist climate could sustain an effective bioreactor operation by leachate recirculation alone. Both commenters (IV-L-02, IV-L-04) also expressed concern that landfills recirculating leachate only may reach the 40 percent moisture level in the waste by recirculating leachate from the entire landfill into a single bioreactor cell. One of these commenters (IV-L-04) pointed out that there were odor problems (due to enhanced gas production) at landfills in his State that began recirculating leachate without a collection and control system. The commenter (IV-L-04) stated that his State now requires collection and control for all landfills that recirculate leachate.

Another commenter (IV-L-06) who opposed the exclusion contended that minimal scientifically valid data has been collected to allow for the exclusion. The commenter (IV-L-06) explained that data to support the exclusion are not available because most leachate is recirculated as a leachate treatment method and not to create bioreactor conditions, a secondary benefit.

Response: The EPA has not changed the bioreactor definition. The commenter who opposed the exclusion provided no data to support their position. The EPA believes that a very small percentage of bioreactors in moist climates would reach a moisture content of 40 percent with leachate recirculation only. Due to variations in rainfall throughout the year, it would be difficult to consistently maintain a high moisture content in the waste to function as a fully operational bioreactor. Landfill owners that decide to create bioreactors in the future will typically plan to operate a large area as a bioreactor to achieve potential benefits such as earlier

stabilization of waste, extended use of current sites, and reduced need for new sites. Liquids addition would be needed to maintain such bioreactors.

It would be a large and unnecessary burden to require potentially hundreds of landfills that recirculate leachate but do not add any other liquids to calculate their percent moisture content and determine if they are a bioreactor when EPA expects in most if not all cases that they will not meet the 40 percent moisture criteria in the definition of a bioreactor. These landfills would still be subject to the NESHAP and EG/NSPS control requirements for conventional landfills, which will require gas collection and control after their NMOC emissions reach 50 Mg/yr. State, local, or tribal agencies may develop more stringent regulations for landfills recirculating leachate in cases where odor or air emissions warrant active landfill gas collection and control.

Comment: One commenter (IV-D-10) stated that all bioreactors, including aerobic bioreactors should be controlled prior to commencing operation. Four commenters (IV-L-02, IV-L-04, IV-L-06, IV-L-07) encouraged EPA to include aerobic bioreactor operations by imposing the anaerobic bioreactor emission requirements on aerobic bioreactor landfills. Two of these commenters (IV-L-06, IV-L-07) provided references to available literature on volatile organic compound (VOC) emission tests from lab and full-scale MSW compost operations. These commenters contend that the studies suggest that emissions of VOC or HAP are likely to occur from an aerobic bioreactor landfill. One commenter (IV-L-07) believes these studies show that introduction of air into MSW landfills or composts and the increased temperatures at which they operate can act as a carrier for HAP and NMOC. The commenters (IV-L-02, IV-L-04, IV-L-06, IV-L-07) acknowledged there is a limited amount of data on air emissions from aerobic bioreactors, but believe available literature suggests that equivalent controls for aerobic bioreactor landfills may be warranted; although, one of these commenters (IV-L-06) concluded that there is not enough scientifically valid data available at this time to develop a MACT standard for aerobic bioreactor landfills. Five commenters (IV-L-08, IV-L-09, IV-L-10, IV-L-11, IV-L-12) agreed there is limited data, especially HAP emissions data, and believe it is important to exclude aerobic bioreactors at this time.

Response: The EPA does not consider the references provided for composting operations to be applicable because composting of MSW is not the same as operating an aerobic bioreactor within a MSW landfill. The EPA knows of no full scale aerobic bioreactors in operation in the

United States, and an insufficient amount of aerobic landfill data are available to properly characterize HAP emissions from aerobic bioreactors. The EPA does not expect a significant number of aerobic bioreactors to be built in the next several years (in contrast to the trend for anaerobic bioreactors). For these reasons, EPA has determined that it is not appropriate to include aerobic bioreactors in the definition of bioreactor or the requirements for timely control of bioreactors. However, portions of a landfill that are operated as aerobic bioreactors would continue to be subject to the EG/NSPS and the NESHAP requirements for conventional landfills. Under section 112(f) of the CAA, EPA will evaluate residual risks and promulgate standards to address residual risks within 8 years of promulgation of the NESHAP. In addition, section 112(d)(6) requires review of the NESHAP every 8 years. At that time, EPA will consider any new information on the prevalence and emissions of aerobic bioreactors and controls to determine if any additional requirements are necessary.

Comment: Seven commenters (IV-L-02, IV-L-04, IV-L-08, IV-L-09, IV-L-10, IV-L-11, IV-L-12) noticed that although the preamble to the supplemental proposal specifically excludes aerobic bioreactor operations from the proposed regulations, the bioreactor definition in the rule makes no distinction between aerobic and anaerobic bioreactors. Thus, the proposed definition of bioreactor as it currently reads would falsely include aerobic bioreactor operations.

Response: The EPA fully intended to exclude aerobic bioreactor operations from the bioreactor definition and the requirements for timely control of bioreactors, as clearly stated in the supplemental proposal preamble. The EPA has revised the definition of bioreactor to clarify that bioreactors, as defined for purposes of this rule, are used to accelerate or enhance the anaerobic (without oxygen) biodegradation of the waste.

Comment: One commenter (IV-L-06) believes that the ten bioreactor landfills used to determine the MACT floor for bioreactors do not represent full-scale operational bioreactor landfills. This commenter (IV-L-06) believes the majority of bioreactor landfills in operation are considered experimental or research projects. The commenter (IV-L-06) contended that the gas collection systems at these experimental bioreactors were designed either after waste was already placed (retrofitted in closed landfill cells) or to evaluate gas collection and liquid injection system design. The commenter (IV-L-06) suggested that EPA review its data for these ten operational bioreactor landfills to determine whether they are full-scale or experimental bioreactors.

Response: In determining the MACT floor for bioreactors, EPA identified 24 operational, anaerobic bioreactors in the U.S., based on available data. For categories or subcategories with fewer than 30 sources, the CAA requires that the MACT floor for existing sources be based on the best-performing 5 sources. In reviewing the information used to identify the ten bioreactor landfills that have collection and control systems and set the bioreactor MACT floor, EPA found that at least eight are known to have full-scale operational bioreactors. These eight bioreactor landfills are used for long-term bioreactor operations, not pilot research projects. Because more than five sources in the subcategory have timely control, the MACT floor remains unchanged even if only full-scale operational bioreactors are considered. For reasons stated in the preamble and other responses in this section, the bioreactor provisions of the NESHAP apply to bioreactors at landfills with design capacities greater than or equal to 2.5 million Mg and 2.5 million m³, whether the entire landfill or a portion of the landfill (i.e., a cell or group of cells) is operated as a bioreactor. In other words, pilot-scale bioreactors within large landfills must fulfill the same requirements as full-scale bioreactors.

Comment: Two commenters (IV-L-03, IV-L-07) requested clarification that landfill gas condensate is considered part of leachate, as used in the bioreactor definition of the rule. The commenters (IV-L-03, IV-L-07) explained that landfill gas condensate is often mixed with leachate for recirculation or disposal. One commenter (IV-L-03) stated that inclusion of condensate with “leachate” would also eliminate the potential for a small area of waste surrounding a condensate drip leg to inadvertently achieve a moisture content greater than 40 percent.

Response: The EPA does consider landfill gas condensate to be included in the term “leachate.” Condensate is generated when landfill gas is recovered through the collection system. Landfill gas condensate is small in volume compared to leachate, and is typically collected and treated along with leachate. The definition of bioreactor has been revised to reflect this clarification.

Comment: One commenter (IV-L-05) requested that EPA address the issue of leachate collection system performance to assure that bioreactor landfills are a viable alternative to conventional landfill designs. The commenter (IV-L-05) believes that typical leachate collection systems designed for conventional MSW landfills would be susceptible to severe clogging when

operating under “bioreactor” conditions. The commenter (IV-L-05) is concerned that any significant increase in leachate flux through the leachate collection system, due to bioreactor conditions, would accelerate the production of chemical precipitates and biological growths within the collection system components, thus adversely affecting their performance. The commenter proposed that EPA make several changes to the NESHAP, 40 CFR part 258 (RCRA regulations), and EPA’s technical guidance to reduce clogging of leachate collection systems at bioreactor landfills.

Response: EPA does not have the authority to regulate the design of leachate collection systems under NESHAP, which are developed under section 112 of the CAA and focus on control of HAP emissions. The RCRA rulemaking and landfill design guidance are outside the scope of this rulemaking. The issue of potential clogging of leachate collection systems at bioreactor landfills should be addressed by the owner/operator of the bioreactor during system design and operation.

Comment: Two commenters (IV-L-03, IV-L-07) supported EPA’s approach for using site-specific procedures to determine moisture content of the waste mass within bioreactor landfills. One commenter (IV-L-03) believed that mass balance calculations will usually be necessary because accurate methods for in-situ waste moisture measurement do not currently exist. Another commenter (IV-L-07) added that EPA should avoid the implication that moisture content should be regularly monitored for conventional landfills, or that once a bioreactor landfill has begun operating, that moisture content must be included in a monitoring plan for the facility.

Response: The EPA is encouraged by the commenters’ acceptance of site-specific approaches for determining the moisture content of the waste mass in bioreactors. EPA believes that allowing site-specific procedures minimizes the recordkeeping burden by allowing landfills to use calculations they already have available. EPA agrees that most landfills will use a mass balance approach. It is important, however, that these procedures and assumptions are appropriate and well-documented, as required by §63.1980(g) and (h). To be considered a bioreactor, a liquid other than leachate must be added (leachate includes landfill gas condensate), and the waste must have a minimum average moisture content of 40 percent by weight. Therefore, calculating moisture content at conventional landfills is not necessary unless liquids

other than leachate are added to the waste mass. Moisture calculation is required in only two situations:

- (1) Landfills that add liquids other than leachate but do not comply with the bioreactor control requirements must calculate moisture content to demonstrate that it is less than 40 percent.
- (2) Landfill bioreactors that do not start operating the gas collection and control system within 180 days after initiating liquids addition, but instead elect to start operating the gas collection and control system within 180 days after the waste moisture content reaches 40 percent must calculate waste moisture content to determine when 40 percent is reached. They must report within 90 days of achieving 40 percent moisture content.

Landfills that do not add liquids other than leachate, and landfills that add liquids and comply with the bioreactor control requirements within 180 days of initiating liquids addition do not have to calculate waste moisture content at all. A bioreactor landfill is not required to include moisture content as part of its monitoring plan.

Comment: Two commenters (IV-L-02, IV-L-04) requested that EPA establish which liquids would be acceptable for addition or recirculation into a landfill for purposes of bioreactor operations. One of these commenters (IV-L-04) suggested that EPA explain or define the term “liquid” to include only aqueous liquids which have been demonstrated to be compatible with the microbial decomposition process in the landfill, such as water, storm water runoff, certain waste waters, and other liquid wastes. Both commenters (IV-L-02, IV-L-04) explained that not all liquid wastes are appropriate for bioreactor operations and can actually be detrimental to the biodegradation process. One commenter (IV-L-02) stated that waste water sludges or other solid wastes currently accepted at several MSW landfills may contribute significantly to the moisture content such that leachate quantities alone may be sufficient to sustain an effective bioreactor.

Response: It is not EPA’s responsibility to determine what type of liquids are appropriate for bioreactor operation. This is best handled on a site-specific basis by engineers designing and operating the bioreactor. The EPA considers the term “liquid” to refer to a fluid that has no independent shape but has a definite volume, as defined by Webster’s dictionary. The EPA believes that the term "liquid" is commonly used and understood, and does not believe a definition unique to the landfill rule is necessary. The EPA regards waste water sludges as liquids other

than leachate that would be added into the waste mass and contribute to the bioreactor operation. The preamble to the rule has been revised to include this clarification.

Comment: One commenter (IV-L-06) expressed concern that the requirement of a gas collection and control system for bioreactors that meets the EG/NSPS requirements for large MSW landfills may be operationally impractical. The commenter (IV-L-06) explained that vertical collection wells spaced at the distances required by the EG/NSPS would be in the way of further waste placement, as well as landfill vehicles. This means that liquids addition could not begin within a landfill cell until after closure of that cell; however, the waste should be wetted as placed to maximize biodegradation rates.

Response: The EPA responds that designs are available that allow installation of a collection system prior to liquids addition. Bioreactor landfills use a variety of vertical and horizontal collection systems, and several have installed collection systems prior to liquids addition. For example, horizontal gas collection systems have been installed in the same area as the leachate recirculation system as the bioreactor is being filled with waste. As waste is placed in the area and leachate recirculation is begun, the gas collection system will already be in place and can begin operation as well. The EG/NSPS (§60.752(b)(2)) include general criteria for collection system design but allow for a variety of site-specific vertical or horizontal collection system designs. Timely control of each area within the bioreactor is necessary to control the higher HAP emission rates in the first two to five years of bioreactor operation.

Comment: One commenter (IV-L-07) agrees with EPA's allowance for early shutdown of gas controls after closure of a bioreactor landfill. The commenter (IV-L-07) requested that EPA clarify that the bioreactor portion of an integrated collection and control system, where gas is gathered from both conventional and bioreactor landfill cells, is allowed to shutdown early, similar to stand-alone controls for a bioreactor landfill. The commenter (IV-L-07) understands that any residual emissions from the bioreactor landfill cells would still need to be accounted for under the EG/NSPS and NESHAP requirements for conventional landfills. The commenter (IV-L-07) also requested extending early shutdown of gas control systems to bioreactor landfills where it can be demonstrated that gas depletion is equivalent to a bioreactor landfill. The commenter (IV-L-07) suggested applying this condition to landfills that never meet 40 percent moisture content, but

have accelerated degradation through liquids addition or leachate recirculation and exhausted the gas supply of the landfill soon after closure.

Response: The EPA's intent is to allow shutdown or removal of the collection and control system for the bioreactor when the criteria in §63.1952 for bioreactor control system removal are met. The commenter is correct that if an integrated gas collection and control system collects gas from both conventional and bioreactor landfill cells, the bioreactor portion of the collection system can be shut down when the bioreactor meets the criteria in §63.1952(a) or (b). The landfill would continue to collect and control gas from the conventional portion of the landfill until the EG/NSPS criteria for control system removal are met.

With regard to the commenters second question, the provisions for timely removal of bioreactor collection and control systems apply only to landfill areas that meet the definition of a bioreactor and have installed controls in a timely manner, as required by the bioreactor provisions. Extending early control system removal to other areas of the landfill that are not bioreactors and did not install controls early would result in greater emissions. Research indicates that a waste moisture content in the range of 40 to 70 percent is needed for optimum bioreactor operation, and at lower moisture levels, waste will degrade less rapidly and emissions will last for a longer period of time. The EG/NSPS already contains sufficient and appropriate provisions allowing for control system removal from landfill areas that are not bioreactors. In particular, if an area within the landfill is nonproductive according to the criteria in §60.759(a)(3)(ii) of 40 CFR 60 subpart WWW (the NSPS), then the landfill owner/operator does not need to collect gas from that area. These provisions would allow an owner/operator to exclude areas where gas production has declined as long as the total areas excluded contribute less than 1% of the NMOC emissions from the landfill. Under the EG/NSPS, the collection and control system can also be capped or removed when the landfill is closed, the control system has been operating at least 15 years, and NMOC emissions from the landfill are less than 50 Mg/yr as specified in §60.752(b)(2)(v) of subpart WWW.

Comment: Two commenters (IV-L-02, IV-L-04) expressed concern that current regulations which govern MSW landfills nationwide (40 CFR part 258) strictly prohibit the addition of liquids other than leachate (including condensate) into MSW landfills. These commenters (IV-L-02, IV-L-04) questioned EPA's action to regulate bioreactor landfills in a

manner that is not currently allowed under related regulations governing landfills. One of the commenters (IV-L-04) pointed out that the proposed definition of a bioreactor landfill would exclude all bioreactor projects in his State, because under the current provisions of 40 CFR part 258 only leachate can be recirculated into a landfill. The other commenter (IV-L-02) suggested that EPA revise the proposed rule to address the fact that to allow liquids addition other than leachate either an XL project authorization or other regulatory revision is necessary. The commenter (IV-L-02) noted that a proposed regulation for research, development, and demonstration (RD&D) permit provisions for 40 CFR part 258 (67 FR 39662, June 10, 2002) would allow approved States the ability to issue RD&D permits to allow liquids other than leachate to be added into landfills. The commenter (IV-L-02) stated that it would be presumptive for EPA to use information from the proposed RD&D permits rule when they are not yet promulgated.

Response: The EPA recognizes that it is difficult for an owner/operator of a municipal landfill to operate a large bioreactor in the U.S. as defined in today's rule. This is because of the Federal criteria regulating MSW landfills, specifically 40 CFR part 258.28 which prohibits the addition of liquids other than leachate and gas condensate to a landfill and 40 CFR part 258.26 which limits the entry of rainwater into municipal landfills through specified run-on control systems. However, EPA responds that there are bioreactors in existence in the U.S. that are currently adding liquids other than leachate, either through Project XL or other case-by-case approvals from States. The EPA has the authority and obligation to regulate HAP emissions from bioreactor landfills, regardless of how these bioreactor landfills are allowed to add liquids other than leachate. In addition, on June 10, 2002, EPA proposed a revision to 40 CFR part 258 that would allow the Director of an approved State to issue a RD&D permit for a MSW landfill (67 FR 39662). This proposed RD&D rule would allow the States to grant variances to certain parts of the MSW landfills criteria (40 CFR part 258) through the issuance of RD&D permits. As a result, once this RD&D rule becomes final and an approved State integrates the new Federal regulations, the Director of an approved State may issue permits which could potentially allow for the operation of a bioreactor landfill as long as there is no increased risk to human health and the environment (as compared to a municipal landfill permitted under the existing 40 CFR part 258

criteria). Therefore, once the proposed rule allowing RD&D permits for municipal landfills becomes final, EPA expects the number of bioreactor landfills to increase over the next few years.

11.0 TITLE V

Comment: Two commenters (IV-D-02, IV-D-07) recommended that EPA clarify that deviations that are properly addressed in accordance with the SSM plan under the proposed rule will not become violations under any CAA program or permit, such as a title V permit, in which the standard, limitation, prohibition, or other Federally-enforceable requirement is contained. The commenters (IV-D-02, IV-D-07) stated that the proposed rule suggested that any deviations that occur during SSM would not be violations under section 112 if the SSM plan were adequate and followed. However, the commenters (IV-D-02, IV-D-07) are concerned that such a deviation might be considered a violation under title V and/or the EG/NSPS for MSW landfills.

Response: The EPA responds that to the extent that a source is in compliance with the applicable SSM provisions of parts 60 and 63, the source is in compliance with its title V permit with respect to these specific applicable requirements. In terms of the EG/NSPS for landfills, deviations, and therefore potential violations, will be defined by the applicable requirements (i.e., 40 CFR part 60, subpart WWW, an EPA-approved and effective State or tribal plan, or the Federal plan that implements the EG.

Furthermore, in response to this comment, §63.1970 has been removed from the final NESHAP to eliminate any confusion regarding the use of SSM plans. Given that the revisions to the general provisions for part 63 (67 FR 16582, April 5, 2002) included revisions to §63.6(e), a subsection which addresses SSM plans, and given the other language in the general provisions for parts 60 and 63, the NSPS for landfills, and the landfills Federal plan relevant to this topic, EPA does not believe a regulatory section regarding the use of SSM plans is needed in the final NESHAP. See 40 CFR 60.11(c), 60.755(e), 63.6(e), 63.6(f)(1), and 62.14354(b).

Comment: Two commenters (IV-D-05, IV-D-08) requested a more detailed discussion of which reporting requirements under the NESHAP would satisfy specific requirements under the

title V program. Both commenters (IV-D-05, IV-D-08) cited a specific example: The proposed rule requires that the landfill owner/operator notify EPA within 2 days of a SSM event. The commenters (IV-D-05, IV-D-08) questioned whether this requirement would satisfy the "prompt reporting" requirements of the title V program. The commenters (IV-D-05, IV-D-08) stated that if the requirement were meant to fulfill the "prompt reporting" requirements of title V, then it would be appropriate to allow delegation of the reporting requirements to the State or local enforcement agencies, in accordance with their title V programs. The commenters (IV-D-05, IV-D-08) understood that, in accordance with 40 CFR part 70 regulations, the State or local enforcement authorities should provide their own definition of "prompt reporting".

Response: The EPA responds that, as many owners/operators of landfills subject to this subpart will have the requirements of the landfills NESHAP in their title V permits, any reports submitted for such sources will need to satisfy the reporting requirements of the landfills NESHAP and title V (e.g., type of report, content of report, and frequency of submission). A permitting authority is not, however, precluded from consolidating required reports as long as all reporting requirements of the NESHAP and title V are met.

The EPA would like to emphasize that under 40 CFR part 70 or 71, any application form, report, compliance certification, or other document required by a permit to be submitted to a permitting authority must contain certification by a responsible official that the statements and information in the document are true, accurate, and complete. See 40 CFR 70.5(d), 70.6(c)(1), 71.5(d), and 71.6(c)(1). Thus, to the extent reports submitted under the NESHAP are also required by a title V permit to be submitted, they must meet the title V certification requirement in order to meet the reporting requirements of title V.

The commenters mentioned a specific requirement discussed in the preamble to the proposal and found in Table 1 of the proposed and final landfills NESHAP regulation and in §63.10(d)(5)(ii) of the NESHAP general provisions. This provision states that any time an owner/operator takes an action during a SSM event which is not consistent with the procedures specified in the affected source's SSM plan, the owner/operator shall report the actions taken for that event within 2 working days after commencing actions inconsistent with the plan followed by a letter within 7 working days after the end of the event. The commenters questioned whether this requirement would satisfy the prompt reporting requirements of title V.

The EPA responds that in terms of the prompt reporting of deviations, title V requirements in 40 CFR 70.6(a)(3)(iii)(B) requires the permitting authority to define “prompt” in relation to the degree and type of deviation likely to occur and the applicable requirements. Therefore, it is the responsibility of the part 70 permitting authority to determine whether the timing of reports under 40 CFR 63.10(d)(5)(ii) is sufficient to meet the permitting authority’s requirements for the prompt reporting of deviations. The permitting authority may decide for a particular source or source category, or as a general matter, to impose more stringent reporting requirements (e.g., type of report, content of report, and frequency of submission) than those specified in an applicable requirement.

As noted above, the commenters stated that if the requirements in §63.10(d)(5)(ii) were intended to fulfill the “prompt reporting” requirements of title V, then it would be appropriate to allow delegation of the reporting requirements to the State or local enforcement agencies, in accordance with their part 70 programs. The EPA would like to clarify that the requirements in §63.10(d)(5)(ii) are separate applicable requirements. They are part of the NESHAP general provisions that apply to the landfills NESHAP, and to other NESHAP, and were designed to assure compliance with SSM requirements; they were not designed to fulfill the prompt reporting requirements of Title V. Moreover, in response to the last sentence of the above comment, EPA would like to reiterate that part 70 permitting authorities are required to define “prompt” as described above, but this does not alleviate the need for a source to comply with the provisions of §63.10(d)(5)(ii). Finally, note that approved part 70 programs are not delegated programs, but rather programs that have been submitted by a State or tribe to EPA for approval. Also, note that State and local agencies may be delegated the authority to implement and enforce the landfills NESHAP following the part 63 delegation procedures. See 40 CFR 60 subpart A, §§ 63.12 and 63.13 and subpart E §§63.90 through 63.99 for NESHAP delegation procedures and reporting addresses.

Comment: One commenter (IV-D-09) recommended that EPA delete the requirement mandating that area sources be required to obtain a title V permit and instead allow part 60 to address title V integration. The commenter (IV-D-09) expressed concern that including this section in the NESHAP causes confusion on the timing of the title V requirements because the landfills EG/NSPS already contains title V permitting requirements for area sources. If EPA

retains the requirement that area sources obtain a title V permit, the commenter (IV-D-09) requested that EPA justify why area source landfills must be permitted.

Response: In response to this comment, title V requirements included in §63.1935 at proposal have been deleted. The EPA further responds that section 502(a) of the CAA requires any source, including an area source, subject to standards or regulations under section 111 or 112 of the CAA to operate in compliance with a title V permit after the effective date of any title V permits program. This section states that the Administrator may promulgate regulations to exempt one or more source categories, in whole or in part, from the requirements of the subsection if the Administrator finds that compliance with title V requirements is impracticable, infeasible, or unnecessarily burdensome on such categories. Thus, EPA does not need to justify requiring title V permits. The CAA mandates criteria that must be met to justify an exemption for any category of sources. According to section 502(a), however, the Administrator may not exempt any major source from the requirements of title V.

Although section 502(a) requires that area sources subject to regulations under section 111 or 112 be permitted unless the test in this section is met (i.e., the Administrator finds that compliance with title V permitting requirements is impracticable, infeasible, or unnecessarily burdensome), EPA is not applying this test to the landfills NESHAP.¹ Rather, consistent with what the commenter suggested, EPA is allowing the EG/NSPS for MSW landfills to address the permitting requirements for area source landfills. This approach is justified because the same universe of area source landfills would have been required to apply for a title V permit under the final NESHAP (if the final rule were promulgated as proposed) as is currently subject to title V permitting requirements under the NSPS for landfills and whatever plan is used to implement the EG in an area (i.e., an EPA-approved and effective State or tribal plan or the landfills Federal plan). Moreover, most area source landfills which have a design capacity equal to or greater than

¹ It is important to note that the determination regarding the permitting of area sources under this NESHAP does not affect the permitting of area sources under other section 111 or 112 standards. Rather, to exempt area sources under either a section 111 or 112 standard, the test in section 502(a) must be met. If commenters choose to try and meet this test when commenting on a proposed section 111 or 112 standard, they must submit comments which document in detail the ways in which title V requirements are impracticable, infeasible, or unnecessarily burdensome for the source category in question.

2.5 million Mg and 2.5 million m³ have already been required to apply for a title V permit due to either the NSPS for landfills, an EPA-approved and effective State or tribal plan for landfills, or the landfills Federal plan. See 40 CFR 60.752(c), 60.32c(c), and 62.14352(e). See also the “Clarification of title V Permitting Requirements” section of the EG/NSPS direct final rule amendments for MSW landfills (63 FR 32743, 32746, June 16, 1998). In fact, unless the owner/operator of a MSW landfill only recently commenced construction of the landfill and has not yet been required to file a design capacity report (which the NSPS requires within 90 days after the owner/operator commences construction), all area source landfills of the design capacity noted above and which meet the definition of new or existing under the EG/NSPS should have already applied for a title V permit. As a result, EPA believes that it is unnecessary for area sources to be required to apply for a title V permit as a result of the landfills NESHAP.

If a MSW landfill is a major source or is a part of a major source as defined under one or more of title V’s three major source definitions (section 112, section 302, and part D of title I of the CAA),² a title V application from such a source may be due even earlier than the deadlines established by 40 CFR part 60, subpart WWW, any EPA-approved and effective State or tribal plan, or the landfills Federal plan. When a source is subject to title V for more than one reason (e.g., meeting the title V applicability criteria in subpart WWW as well as having the potential to emit one or more pollutants at major source levels), the 12-month time frame (or earlier if required by the title V permitting authority) for submitting a title V application is triggered by the requirement which first causes the source to become subject to title V. See CAA section 503(c) and 40 CFR 70.3(a) and (b), 70.5(a)(1), 71.3(a) and (b), and 71.5(a)(1). See also the “Clarification of Title V Permitting Requirements” section of the EG/NSPS direct final rule amendments for MSW landfills (63 FR 32743, 32746, June 16, 1998).³

² For information on aggregating emissions units to determine what is a source under title V, see the definition of major source in 40 CFR 70.2, 71.2, and 63.2. Nothing in this subpart revises how affected sources are aggregated for purposes of determining whether an affected source is a part of an area, nonmajor, or major source under any provisions of the Act or EPA’s regulations.

³ Consistent with the above, it is important to note that an application deadline once established for a source cannot be superseded by another later application deadline unless the title V program itself changes (e.g., a State program under 40 CFR part 70 becomes a Federal

Given that most area source landfills subject to the NESHAP are already subject to the requirements of title V, it is important to note the following. In cases where the owner/operator of a landfill has submitted a timely and complete title V application,⁴ but the draft title V permit has not yet been released by the permitting authority, the owner/operator must supplement his title V application⁵ by incorporating the applicable requirements of the final landfills NESHAP in accordance with 40 CFR 70.5(b) or 71.5(b). Additionally, if a landfill is a major source, or is a part of a major source, and is covered by a title V permit with a remaining permit term of 3 or more years on the promulgation date of the landfills NESHAP, the title V permitting authority must complete a reopening of the source's title V permit to incorporate the requirements of the landfills NESHAP within 18 months of the promulgation date of the final rule. See CAA section 502(b)(9) and 40 CFR 70.7(f)(1)(i) and 71.7(f)(1)(i).

program under 40 CFR part 71).

⁴ A title V application should be submitted early enough for the permitting authority to find the application either complete or incomplete before the title V application deadline. In the event the application is found incomplete by the permitting authority, the source must submit the information needed to make the application complete by the application deadline in order to obtain an application shield. (An application shield allows a source to operate without being in violation of title V prior to being issued a final title V permit.) To maintain an application shield, a source must submit information as requested by the permitting authority and by the specified deadline. See section 503(d) of the CAA, 40 CFR 70.5(a)(2), 70.7(b), 71.5(a)(2), and 71.7(b).

⁵ A title V application from a major source must address all emissions units at the title V source, not just the section 111 or 112 emissions unit. See 40 CFR 70.3(c)(1) and 71.3(c)(1).

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