



# Californians Against Waste

Conserving Resources. Preventing Pollution. Protecting the Environment.

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**SENT VIA CERTIFIED MAIL, RETURN RECEIPT REQUESTED**

April 30, 2014

Gina McCarthy- Administrator  
United States Environmental Protection Agency  
Ariel Rios Building  
1200 Pennsylvania Avenue, NW  
Washington D.C., 20460

**RE: 60-Day Notice of Intent to File Suit Under the Clean Air Act for EPA's Failure to Perform Nondiscretionary Duties Under Section 112(d)(6) and (f) Relating to Municipal Solid Waste Landfills**

This letter serves as a 60-day notice of Californians Against Waste's (CAW) intent to sue Administrator McCarthy of the Environmental Protection Agency (EPA) for failing to perform nondiscretionary duties under section 112(d)(6) and (f) of the Clean Air Act (CAA), 42 U.S.C. § 7412. First, 112(d)(6) requires EPA to review, and revise as necessary, the national emission standards for hazardous air pollutants (NESHAP) no less often than every 8 years. Second, 112(f) requires EPA to conduct a residual-risk review of emission standards within 8 years after promulgation (9 years initially). In short, EPA complies with 112(d)(6) and (f) by conducting a Risk and Technology Review (RTR). This Notice seeks to initiate an RTR immediately.

In 2003, EPA promulgated final NESHAP for municipal solid waste (MSW) landfills in 40 C.F.R. § 63.1930–63.1990 (2003) (40 C.F.R., part 60, subpart AAAA).<sup>1</sup> These NESHAP were actually design and operational standards and *not* actual emissions standards for hazardous air pollutants (HAP). Over eleven years later, EPA has not completed an RTR of NESHAP, nor is an RTR on EPA's schedule.<sup>2</sup> CAW is informed and believes on the basis of such information that EPA's thorough review of: 1) updated collection and control technologies; 2) updated emission monitoring technology and data; 3) landfill practices (e.g., diverting organic waste, upgrading landfill covers to geomembranes, clay, biocovers, etc.); and 4) residual risks posed by HAP, will result in more stringent standards that actually set emission standards for HAP.

This 60-day notice is provided pursuant to 304(b)(2) of the CAA, which requires that citizens provide 60 days' notice before bringing suit against the Administrator for failing to

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1. 68 Fed. Reg. 2,227, 2,227 (Jan. 16, 2003) (to be codified at 40 C.F.R. § 63.1930–63.1990, part 60, subpart AAAA).

2. EPA Home, Air and Radiation, Risk and Technology Review, <http://www.epa.gov/ttn/atw/rrisk/rtrpg.html> (last visited Feb. 23, 2014). The status of 112(d) standards for landfills can be accessed at EPA Home, Air and Radiation, Air Toxics Website, <http://www.epa.gov/ttn/atw/landfill/landflpg.html> (last visited Feb. 23, 2014).

perform nondiscretionary duties.<sup>3</sup>

## OVERVIEW

The CAA was enacted to “protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population.”<sup>4</sup> Section 112(d) sets national emission standards for major and area sources of hazardous air pollutants. Affected sources achieve EPA’s NESHAP by implementing the following: 1) collection and control technologies; 2) landfill practices; 3) startup, shutdown, and malfunction (SSM) plans; 4) out-of-bounds monitoring parameters for operating condition deviations; and 5) reporting on landfill operations.

On July 16, 1992, EPA listed landfills as sources of HAP after finding they emit nearly 30 HAP.<sup>5</sup> Landfills emit HAP through the decomposition of organic waste, chemical reactions, and volatilization. EPA has recognized that HAP can cause adverse health effects and can be carcinogenic.<sup>6</sup> Uncollected landfill gas (LFG), and the HAP contained within, are emitted to the atmosphere unabated. Fortunately, EPA has recognized that health risks are significantly reduced at landfills that collect and control LFG<sup>7</sup>—HAP is part of LFG. Other HAP are formed during the LFG combustion process, including acid gases and dioxins. Still other HAP, including mercury compounds, pass through typical LFG control systems (e.g. flares, combustion engines) uncontrolled. Recent sampling has confirmed the presence of HAP in LFG. A 2012 EPA Report found 27 different HAP in LFG, including three known carcinogens and seven suspected carcinogens.<sup>8</sup>

LFG collection and destruction remain an important mechanism to control HAP. In the 2012 EPA Report, LFG from three landfills was analyzed to determine the efficiency of methane abatement. The methane abatement efficiency, inclusive of the effects of both LFG collection and the oxidation of methane in cover soils, was found to range from 38 to 88%.<sup>9</sup> The landfill industry has provided to EPA its own assessment of LFG collection efficiencies, providing documentation of efficiencies ranging from 50% to 99% depending on the type of cover system in place.<sup>10</sup> For example, the landfill industry has asserted that an average landfill with a final soil or geomembrane cover collects 95% of the LFG generated. The landfill industry has communicated its findings to EPA, including in support of the adoption of the LFG collection

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3. To the extent 180 days’ notice is required prior to bringing suit for the violations alleged herein, this letter also commences such notice period.

4. 42 U.S.C. § 7401(b)(1) (emphasis added).

5. 65 Fed. Reg. 66,672, 66,675 (Nov. 7, 2000).

6. 68 Fed. Reg. at 2,227–29.

7. *Id.* at 2,229.

8. U.S. ENVIRONMENTAL PROTECTION AGENCY, QUANTIFYING METHANE ABATEMENT EFFICIENCY AT THREE MUNICIPAL SOLID WASTE LANDFILLS 3-12 (Jan. 2012) [hereinafter 2012 EPA REPORT], available at <http://nepis.epa.gov/Adobe/PDF/P100DGTB.pdf>.

9. *Id.* at 4-3.

10. SCS ENGINEERS, CURRENT MSW INDUSTRY POSITION AND STATE-OF-THE-PRACTICE ON LFG COLLECTION EFFICIENCY, METHANE OXIDATION, AND CARBON SEQUESTRATION IN LANDFILLS 1 (2009), available at [http://www.scsengineers.com/Papers/Sullivan\\_SWICS\\_White\\_Paper\\_Version\\_2.2\\_Final.pdf](http://www.scsengineers.com/Papers/Sullivan_SWICS_White_Paper_Version_2.2_Final.pdf).

efficiency defaults as part of a calculation methodology for mandatory GHG reporting reflective of the industry's current state of practice.<sup>11</sup>

EPA may distinguish among classes, types, and sizes of sources within a category or subcategory in establishing emission standards.<sup>12</sup> For example, the standards for area sources and major sources may be different. Major sources of HAP are essentially large landfills, while area sources are generally smaller landfills. Area sources emit fewer than 10 tons per year of any single HAP and fewer than 25 tons per year of any combination of HAP.<sup>13</sup>

Section 112(d)(2) provides for the maximum achievable control technology (MACT) standard, which has the potential to be the most stringent standard.<sup>14</sup> EPA may apply it to major **and** area sources.<sup>15</sup> For area sources, EPA may elect to promulgate a less stringent standard that provides for the use of “generally available control technologies or management practices,”<sup>16</sup> known as the GACT standard.

Section 112(h) allows EPA to promulgate a design, equipment, work practice, or operational standard, or combination thereof, in lieu of an emission standard (MACT or GACT) if it is not feasible in the judgment of the Administrator to prescribe or enforce an emission standard for control of HAP. EPA relied on 112(h)'s infeasibility exception when it promulgated the 2003 NESHAP regulations. EPA noted the difficulty in accurately measuring landfill HAP emissions.<sup>17</sup> As a result, EPA found that the emission guidelines and new source performance standards (EG/NSPS) promulgated under section 111 of the CAA (and codified in 40 C.F.R. § 60.30c–60.36c, § 60.750–60.759 (40 C.F.R., part 60, subpart Cc and WWW) were the best available control for HAP under 112.<sup>18</sup> In short, EPA set 112's MACT standard to largely require compliance with 111's EG/NSPS design and operational standard.<sup>19</sup> The EG/NSPS control was promulgated under a best available control technology (BACT)<sup>20</sup> standard, which is not as stringent as MACT can be. Furthermore, since the EG/NSPS control is a design and operational standard it is *not an actual emission standard for HAP*. It's time for EPA to set actual

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11. U.S. ENVIRONMENTAL PROTECTION AGENCY, MANDATORY GREENHOUSE GAS REPORTING RULE: EPA'S RESPONSE TO PUBLIC COMMENTS VOLUME NO.: 36 SUBPART HH—LANDFILLS, DOCKET # EPA-HQ-OAR-2008-0508-2253 (Sept. 2009).

12. 42 U.S.C. § 7412(d)(1).

13. § 7412(a)(2).

14. “Emissions standards promulgated under this subsection and applicable to new or existing sources of hazardous air pollutants shall require the *maximum degree of reduction in emissions of the hazardous air pollutants* subject to this section (including a prohibition on such emissions, where achievable) that the Administrator, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable . . . .” § 7412(d)(2) (emphasis added).

15. EPA recognized that area sources may be controlled using MACT or GACT. 65 Fed. Reg. at 66,675.

16. “With respect only to categories or subcategories of area sources listed pursuant to subsection (c), the Administrator may, in lieu of the authorities provided in paragraph (2) and subsection (f), elect to promulgate standards or requirements applicable to sources in such categories or subcategories which provide for the use of generally available control technologies or management practices by such sources to reduce emission of hazardous air pollutants.” § 7412(d)(5).

17. *See* 65 Fed. Reg. at 66,677.

18. *Id.*

19. 61 Fed. Reg. 9,905 (Mar. 12, 1996) (to be codified in 40 C.F.R. § 60.30c–60.36c, § 60.750–60.759 (40 C.F.R., part 60, subpart Cc and WWW)).

20. 42 U.S.C. § 7411(a)(1).

emission standards for HAP based on actual measurements of LFG collection and destruction efficiency as well as post LFG combustion emissions.

Both the EPA's own 2012 Report and the landfill industry's emission data can assist EPA in setting actual emission standards for HAP controllable through control devices (e.g., flares). Their data states that mid-range default LFG collection efficiencies are 95% for landfills containing a final soil and/or geomembrane cover system, 75% for landfills with an intermediate soil cover, and 60% for landfills with a daily cover.<sup>21</sup> EPA has already adopted these defaults as reflective of average landfills in its Greenhouse Gas Reporting Program.<sup>22</sup> Given that the landfill industry has asserted that these LFG collection efficiencies represent the emissions control already achieved in practice by the "mid-range" landfill, EPA should establish MACT floors at the collection efficiencies achieved by the top 12% of landfills for each of the three predominate cover types.

Furthermore, since landfill MACT standards were finalized in 2003, EPA, the landfill industry, and academia have used a variety of area source measurement techniques to quantify landfill methane emissions, including flux chambers, air dispersion modeling (using surface methane measurements), and optical remote sensing. In particular, optical remote sensing is of particular interest, given its use by landfill operators, EPA, and the National Oceanic and Atmospheric Administration.<sup>23</sup> In fact, in reference to this technology, EPA's Office of Research and Development (ORD) concluded:

Breakthroughs in technology, data analysis in allocating emissions to the entire footprint, and method development to standardize operating procedures have resulted in the ability to more accurately quantify fugitive landfill gas emissions using optical remote sensing technology.<sup>24</sup>

As explained in the EPA ORD 2012 Report, optical remote sensing using EPA Other Test Method-10 (OTM-10) "has been successfully employed to characterize emissions from a variety of sources including landfills, wastewater treatment plants, waste lagoons from hog farms, and variety of industrial sites."<sup>25</sup>

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21. SCS ENGINEERS, *supra* note 10.

22. See 40 C.F.R. § 98.340-48 Tbl. HH-3 (2010).

23. E. D. Thoma et al., *Development of EPA OTM 10 for Landfill Applications*, 136 J. OF ENVTL. ENG'G 769-76 (2010). See C.D. Goldsmith et al., *Methane Emissions from 20 Landfills Across the United States Using Vertical Radial Plume Mapping*, 62 J. OF THE AIR & WASTE MGMT. ASS'N 183-97 (2012); P. Peischl et al., *Quantifying Sources of Methane Using Light Alkanes in the Los Angeles Basin*, 118 J. OF GEOPHYSICAL RESEARCH 4,974-90 (2013) <http://onlinelibrary.wiley.com/doi/10.1002/jgrd.50413/abstract>.

24. 2012 EPA REPORT, *supra* note 8, at 3-30.

25. E.D. Thoma, R.C. Shores et. al., *Open Path Tunable Diode Laser Absorption Spectroscopy for Acquisition of Fugitive Emission Flux Data*, 55 J. OF THE AIR & WASTE MGMT. ASS'N 658-68 (2005). See generally U.S. ENVIRONMENTAL PROTECTION AGENCY, EVALUATION OF FUGITIVE EMISSIONS USING GROUND-BASED OPTICAL REMOTE SENSING TECHNOLOGY (2007), available at <http://nepis.epa.gov/Adobe/PDF/P100ADVE.pdf>; U.S. ENVIRONMENTAL PROTECTION AGENCY, MEASUREMENT OF FUGITIVE EMISSIONS AT REGION I LANDFILL (2004), available at <http://nepis.epa.gov/Adobe/PDF/P1001GBL.pdf>; U.S. ENVIRONMENTAL PROTECTION AGENCY, OPTICAL REMOTE SENSING FOR EMISSION CHARACTERIZATION FROM NON-POINT SOURCES (2006), available at <http://www.epa.gov/ttn/emc/prelim/otm10.pdf>; R. Shores et al., *Plane-Integrated Open-Path Fourier Transform*

In the EPA 2012 Report there was a degree of emission level uniformity measured at all the three landfills, which leads one to believe that the data should be reliable, and enables EPA to set actual emission standards for HAP under 112 just as Congress granted them the power to do. Further delay can prove costly in terms of human health and environmental harm. Any uncertainties with respect to emissions could be reduced by using newly available monitoring technology to complement point source testing.<sup>26</sup> The advancements made over the past 11 years should preclude EPA from a 112(h) infeasibility finding.

**1. EPA FAILED TO PERFORM ITS NONDISCRETIONARY DUTY TO REVIEW, AND REVISE IF NECESSARY, NESHAP FOR LANDFILLS AT LEAST EVERY 8 YEARS PER 112(d)(6).**

Section 112(d)(6) requires EPA to review, and revise as necessary, NESHAP for each category or subcategory of new and existing sources of HAP no less often than every 8 years. NESHAP for landfills were promulgated on Jan. 16, 2003 and codified in 40 C.F.R. § 63.1930–63.1990 (2003). As of Jan. 16, 2011 EPA failed to perform its nondiscretionary duty to review them and revise as necessary.

**2. EPA FAILED TO PERFORM ITS NONDISCRETIONARY DUTY TO CONDUCT A RESIDUAL-RISK REVIEW OF NESHAP FOR LANDFILLS UNDER 112(f).**

Section 112(f) requires EPA to conduct a residual-risk review of NESHAP within 8 years after promulgation (9 years initially).<sup>27</sup> If the residual risk does not protect public health with “an ample margin of safety,” EPA must promulgate health-based standards to further reduce HAP emissions.<sup>28</sup> Furthermore, EPA is required to set more stringent standards if necessary to prevent adverse environmental effects (considering costs, energy, safety, and other relevant factors).<sup>29</sup> NESHAP for landfills were promulgated on Jan. 16, 2003. But a residual-risk review has not been done since.<sup>30</sup> As of Jan. 16, 2012 EPA failed to perform its nondiscretionary duty to conduct a residual-risk review.

**3. EPA INCORRECTLY SET THE MACT FLOOR FOR EXISTING LANDFILLS IN 2003.**

In setting a MACT standard, EPA must first set a MACT floor, which is the minimum emission standard. For existing sources, generally speaking, the MACT floor shall not be less

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*Infrared Spectrometry Methodology for Anaerobic Swine Lagoon Emission Measurements* 21 APPL. ENG. AGRIC. 487–92 (2005).

26. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, 10 WASTE MANAGEMENT 587 (2007) [hereinafter IPCC], available at <http://www.ipcc-wg3.de/assessment-reports/fourth-assessment-report/.files-ar4/Chapter10.pdf>.

27. § 7412(f)(2)(A).

28. *Id.*; see EPA Home, Air and Radiation, Overview by Section of CAA: Introduction to CAA and Section 112 (Air Toxics), <http://www.epa.gov/ttnatw01/overview.html> (last visited Feb. 12, 2014).

29. *Id.*

30. See EPA Home, Air and Radiation, Rule and Implementation Information for Standards of Performance for Municipal Solid Waste Landfills, <http://www.epa.gov/ttn/atw/landfill/landflpg.html> (last visited Feb. 12, 2014).

stringent than the average emission control achieved by the best-performing 12 percent of existing sources (or the best-performing 5 sources for categories or subcategories consisting of fewer than 30 sources).<sup>31</sup> EPA may go “beyond-the-floor” and impose more stringent standards after considering cost, non-air quality health and environmental impacts, and energy requirements.<sup>32</sup> EPA must consider the “beyond-the-floor” criteria.<sup>33</sup>

In 2003, EPA incorrectly focused on the prevalence of 111’s EG/NSPS design and operational standard and not on the best-performing sources based on emissions data.<sup>34</sup> After several cases, EPA no longer establishes MACT floors based on the prevalence of a technology—it must, instead, be based on the best-performing sources.<sup>35</sup>

#### **4. EPA MUST SET CONTROLS FOR ALL HAP, INCLUDING THOSE THAT MAY NOT HAVE CONTROL TECHNOLOGY.**

EPA must set MACT floors for all HAP, even those that may not have control technology.<sup>36</sup> In *Sierra Club v. EPA*, 479 F. 3d 875 (D.C. Cir. 2007), the D.C. Circuit reiterated that MACT floors for existing sources must reflect the average emission limitation achieved by the best performing sources, rather than based on what was achievable, and that EPA cannot set floors of “no control.”

In 2000, EPA noted that emissions of HAP come from the collection, storage, and treatment of landfill leachate by volatilization to the air or coming into contact with groundwater.<sup>37</sup> Landfill leachate is a liquid generated during the waste decomposition process. The EG/NSPS control does not address emissions from leachate/landfill wastewater.<sup>38</sup> EPA stated that it found no information on the prevalence or effectiveness of any practices that may reduce air emissions from wastewater collection and treatment at landfills.<sup>39</sup> As a result, EPA specified: “[W]e have been unable to identify a MACT floor for landfill wastewater emission points.”<sup>40</sup> Going forward, EPA will have to set a MACT floor for leachate/landfill wastewater.

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31. § 7412(d)(3)(A)–(B).

32. *E.g.*, *Cement Kiln Recycling Coalition v. EPA*, 255 F.3d 855, 857–58 (D.C. Cir. 2001) (per curiam). “Emission floors” apply without regard to costs. *Id.* EPA first sets emission floors for each pollutant and source category and then determines whether stricter standards, known as “beyond-the-floor” limits, are achievable in light of the factors listed in 112(d)(2). *Id.* (citing *Nat’l Lime Ass’n v. EPA*, 233 F.3d 625, 629 (D.C. Cir. 2000), as amended on denial of reh’g, (Feb. 14, 2001).

33. *Nat’l Lime Ass’n*, 233 F.3d at 634. “When determining whether to set beyond-the-floor standards, the Clean Air Act requires EPA to consider ‘the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements.’” *Id.*

34. “Since substantially greater than 12 percent of the existing major sources apply this level of control, we determine the MACT floor for existing sources is the EG/NSPS level of control. 65 Fed. Reg. at 66,676.

35. *E.g.*, *Sierra Club v. EPA*, 479 F.3d 875, 878 (D.C. Cir. 2007) (per curiam) (stating that EPA may not deviate from 7412(d)(3)’s requirement that floors reflect what the best performers actually achieve) (citing *Chevron U.S.A., Inc. v. Natural Res. Def. Council*, 467 U.S. 837, 842–43 (1984). EPA has taken the position that it can make corrections to MACT floors already established when it believes the floor was improperly set in the first instance. *Medical Waste Inst. v. EPA*, 645 F.3d 420, 424 (D.C. Cir. 2011).

36. *Sierra Club*, 479 F.3d at 883.

37. 65 Fed. Reg. at 66,675.

38. *Id.* at 66,677.

39. *Id.*

40. *Id.*

The Intergovernmental Panel on Climate Change (IPCC) has stated: “There are numerous mature technologies that can be implemented to improve wastewater collection, transport, re-use, recycling, treatment . . . .”<sup>41</sup>

Current NESHAP regulations have no control for petroleum contaminated soil, which may be a source of HAP through volatilization. Going forward, EPA will have to set a control.

Current NESHAP regulations also have no control for HAP generated during combustion, including acid gases and dioxins. Going forward, EPA will have to set a control.

With regard to mercury, EPA in 2003 determined that there is no control.<sup>42</sup> EPA stated: “No controls for emissions of metal HAP have been demonstrated for landfill gas or landfill gas combustion technologies. Therefore, the MACT floor for metal HAP is no control.”<sup>43</sup> However, EPA did say they are interested in regulating mercury because of its bioaccumulative capacity and known health effects, and the problem is insufficient data to adequately characterize concentrations. In addition, landfill operators now often use activated carbon systems for the adsorption of siloxanes from LFG as a form of pretreatment prior to the use of LFG in energy recovery systems.<sup>44</sup> Activated carbon can also be used to control emissions of heavy metals, like mercury, and could likewise be applied to collected LFG streams in general. Going forward, EPA will have to set control for mercury, and there is a fair amount of emission data for it in EPA’s own 2012 EPA Report and emissions factor database, AP-42.

## **5. EPA SHOULD FULFILL CONGRESS’S INTENT TO PROMOTE PUBLIC HEALTH AND WELFARE BY USING THE MACT STANDARD TO ITS FULLEST POTENTIAL—SETTING ACTUAL EMISSION STANDARDS FOR HAP BASED ON ACTUAL EMISSION DATA FROM THE BEST-PERFORMING SOURCES AND THEN GOING BEYOND-THE-FLOOR.**

As stated above, EPA set 112’s MACT standard to largely require compliance with 111’s EG/NSPS design and operational standard.<sup>45</sup> EPA determined that the EG/NSPS requirements for LFG collection and emissions reductions were the best available control for LFG.<sup>46</sup> Going forward, EPA should consider that when reviewing or revising emission standards an aspirational goal may be set.<sup>47</sup> Furthermore, EPA may go “beyond-the-floor” and must consider the “beyond-the-floor” criteria.<sup>48</sup>

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41. IPCC, *supra* note 26, at 587.

42. 65 Fed. Reg. at 66,677. “Metal HAP, including mercury, may be emitted from landfills and would not be controlled by the EG/NSPS control technologies.” *Id.*

43. *Id.*

44. M. Ajhar et al., *Siloxane Removal from Landfill Gas and Digester Gas – A Technology Overview*, 101 BIORESOURCE TECHNOLOGY 2913–23 (2010).

45. 61 Fed. Reg. 9,905.

46. 65 Fed. Reg. at 66,677.

47. *Natural Res. Def. Council v. EPA*, 529 F.3d 1077, 1081–82 (D.C. Cir. 2008). (“In other words, the *Benzene* standard established a maximum excess risk of 100-in-one million, while adopting the one-in-one million standard as an aspirational goal.”).

48. *Nat’l Lime Ass’n*, 233 F.3d at 634.

The EG/NSPS control was promulgated under a best available control technology (BACT)<sup>49</sup> standard, which does not effectuate MACT's full potential to promote public health and welfare. However, under 112, EPA did require landfills to develop and implement a written startup, shutdown, and malfunction plan (SSM); operating condition deviations for out-of-bounds monitoring parameters; timely control of bioreactors; and increased the reporting frequency for one type of report.<sup>50</sup> Nevertheless, in 2003, *no actual emission standards were set for any HAP*, and that's still the case today. Consequently, section 112 is not reaching its full potential.

The EG/NSPS control does collect HAP,<sup>51</sup> but landfills are not required to determine the extent of collection. EPA has stated that landfill owners and operators are already required to *estimate* NMOC under the EG/NSPS, so it is not necessary to increase the burden by requiring specific HAP measurements.<sup>52</sup> But, when human health and environmental harms hang in the balance, estimates shouldn't suffice, and Congress gave EPA the power to regulate HAP with MACT because HAP is specifically harmful. Furthermore, new area source monitoring technologies, including that used in the 2012 EPA Report, give landfill owners the power to adequately characterize the efficiency of LFG collection, and as a result, the efficiency of HAP collection. Finally, point source emissions testing must be used to complete the quantification of HAP emissions, and verify the efficacy of control systems (e.g., flares, engines, activated carbon) both for HAP contained in LFG and HAP generated during the combustion process.

The EG/NSPS doesn't collect emissions of HAP years after closure when a landfill cover likely fails (more *infra*). Fortunately, the following should be a template to begin setting actual emission standards: 1) 2012 EPA Report, 2) landfill industry's emission data, 3) advances in monitoring technology, and advances in high- and low-tech collection and control technologies (specifically recognized in EPA's report, titled *Available and Emerging Technologies for Reducing Greenhouse Gas Emissions from Municipal Solid Waste Landfills*).<sup>53</sup>

And finally, with respect to pollutants for which a health threshold has been established, 112(d)(4) allows EPA to consider such threshold level with an "ample margin of safety" when establishing NESHAP. Section 112(d)(4) appears to be an underutilized provision.

**6. EPA SHOULD ABOLISH THE DESIGN CAPACITY AND EMISSION EXEMPTIONS AND APPLY MACT TO ALL ACTIVE AND CLOSED—MAJOR AND AREA—LANDFILLS.**

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49. § 7411(a)(1).

50. 40 C.F.R. § 63.1930–63.1990 (2003).

51. 65 Fed. Reg. at 66,678.

52. *Id.*

53. *See generally* U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF AIR AND RADIATION, AVAILABLE AND EMERGING TECHNOLOGIES FOR REDUCING GREENHOUSE GAS EMISSIONS FROM MUNICIPAL SOLID WASTE LANDFILLS (June 2011) [hereinafter AVAILABLE AND EMERGING TECHNOLOGIES], *available at* <http://www.epa.gov/nsr/ghgdocs/landfills.pdf>.



Under the 1990 CAA, EPA has regulated both large and small sources of HAP, but it has mainly focused efforts on larger sources.<sup>54</sup> For example, landfills that are smaller than 2.5 million Mg or 2.5 million m<sup>3</sup> in design capacity and emit fewer than 50 Mg per year of NMOC are currently *not controlled* (EG/NSPS doesn't apply).<sup>55</sup> Essentially all major landfills are subject to EG/NSPS, but it's possible that a few could be exempt if they didn't meet the design capacity and emission criteria. For this reason and reasons below, we urge EPA to abolish the design capacity and emission criteria and apply MACT to all major and area landfills.

First, extending MACT to all landfills will help mitigate the harm caused by failing to perform a timely RTR pursuant to 112(d)(6) and (f). Second, owners and operators of major and area landfills have benefited from standards that haven't changed in 11 years. Third, Congress recognized the danger posed by area landfills under 112(k)'s Area Source Program.<sup>56</sup> Fourth, Congress gave EPA the authority to apply MACT to all area landfills per 112(d)(2). In fact, EPA has recognized this authority and did apply MACT (which was really 111's EG/NSPS based on BACT) to area landfills that were 2.5 million Mg and 2.5 million m<sup>3</sup> or greater in design capacity, and emitted 50 Mg per year or more of NMOC (approximately 5.9 Mg of HAP per year).<sup>57</sup>

With regard to closed landfills, every landfill, regardless of size, poses an emission risk years after closure. EPA stated at one point that “[l]andfill emissions are at their highest level within the year right after closure and then begin to decrease steadily.”<sup>58</sup> Unfortunately, it's been shown that landfill covers deteriorate over time and allow moisture to re-enter that may very well ignite a large second wave of gas generation.<sup>59</sup> It has been estimated that “lifetime” recovery efficiencies of landfill emissions may be as low as 20%.<sup>60</sup> Closed landfills may be the most “active” at this very moment. EPA has recently acknowledged that “[s]ignificant LFG production typically begins one or two years after waste disposal in a landfill and can continue

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54. EPA Home, Air and Radiation, Reducing Toxic Air Pollutants, <http://www.epa.gov/air/caa/peg/toxics.html> (last visited Feb. 19, 2014).

55. 68 Fed. Reg. 2,227, 2,229 (Jan. 16, 2003).

56. “Congress finds that emissions of hazardous air pollutants from area sources may individually, or in the aggregate, present significant risks to public health in urban areas.” § 7412(k). Pursuant to 112(k), EPA must regulate enough area sources to account for 90 percent of their emissions of the 30 HAP that present the greatest threat to public health in the largest number of urban areas.

57. 65 Fed. Reg. at 66,677; 68 Fed. Reg. 2,227, 2,229 (Jan. 16, 2003). In other cases EPA has established standards for area sources based on the requirements in 112(d) and 112(f) applicable to major sources. That approach was used, for example, with respect to MACTs for all major and area sources of secondary lead smelters based on the risks from emissions from that source category. *E.g.*, 60 Fed. Reg. 32,587, 32,591 (June 23, 1995) (“The EPA is also adding secondary lead smelters that are area sources to the list of source categories that are subject to MACT standards.”).

58. 65 Fed. Reg. at 66,677. “Thus, landfills are a unique emissions source, because they have naturally diminishing emissions over time. It makes little sense to require expensive controls for small, closed area source landfills when their emissions are low and will decrease over time. As emissions decrease, there would be a dramatic decrease in the average cost effectiveness per Mg of NMOC reduction achieved through control of small, closed area source landfills.” *Id.*

59. *E.g.*, CALRECYCLE, REVIEW OF WASTE-TO-ENERGY AND AVOIDED LANDFILL METHANE EMISSIONS 4 (July 3, 2012), available at <http://compostingcouncil.org/admin/wp-content/plugins/wp-pdfupload/pdf/55/Cal%20Recycle%20for%20Social%20Media.pdf>.

60. IPCC, *supra* note 26, at 600.

for 10 to 60 years or longer.”<sup>61</sup> EPA has also acknowledged that “[e]ven once the landfill closes, emissions can occur for decades requiring routine maintenance of the interim or final cover in addition to managing the well field and gas collection and control technology.”<sup>62</sup>

Therefore, the current NESHAP’s exemption of landfills that have no additional capacity **and** have not accepted waste since Nov. 8, 1987 should be abolished. Landfills are forever. Simply because one has not accepted waste since 1987, doesn’t mean its contents aren’t actively emitting HAP at an alarming rate.

**7. EPA SHOULD REQUIRE ALL LANDFILLS TO INSTALL THE MOST EFFECTIVE LANDFILL COVERS TO REDUCE LFG EMISSIONS (CONSEQUENTLY HAP EMISSIONS).**

An additional geomembrane or clay cover can be added to landfills, especially older ones (with or without gas collection systems) to reduce LFG emissions.<sup>63</sup> When LFG emissions are reduced, HAP is reduced. A biocover is an additional control technology that does not require extensive retrofit and is applicable to all landfills, including uncontrolled and older landfills with passive or active collection systems.<sup>64</sup> Biofiltration beds are also an option. Both can be fairly significant capital investments, but they require little maintenance, few safety controls for operation, and no start up or shut down procedures.

**8. EPA SHOULD DIVERT ORGANIC MATTER FROM LANDFILLS AND THEREBY REDUCE LFG EMISSIONS (CONSEQUENTLY HAP EMISSIONS).**

Organic materials account for about 55% of waste currently reaching landfills, primarily consisting of food scraps, yard trimmings, wood, and paper/paperboard. Due to their role as the source of methane in landfills, and methane serves as a carrier gas for HAP, the diversion of these materials prior to landfilling would reduce HAP emissions. Diversion methods include composting, recycling, and anaerobic digestion. Also, EPA has recognized that “[c]ombining organic waste diversion with a gas collection and control system can further reduce GHG emissions.”<sup>65</sup>

## CONCLUSION

EPA promulgated NESHAP for landfills in 2003. EPA has not completed an RTR of emission standards within the statutory deadlines set by 112(d)(6) and (f), nor is an RTR on EPA’s schedule. CAW is informed and believes on the basis of such information that EPA’s thorough review of: 1) updated collection and control technologies; 2) updated emission

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61. AVAILABLE AND EMERGING TECHNOLOGIES, *supra* note 53, at 7.

62. 2012 EPA REPORT, *supra* note 8, at xiii.

63. AVAILABLE AND EMERGING TECHNOLOGIES, *supra* note 53, at 12 *citing* URS CORPORATION, GREENHOUSE GAS MITIGATION: LANDFILL GAS AND INDUSTRIAL, INSTITUTIONAL AND COMMERCIAL BOILERS, STEAM GENERATORS AND PROCESS HEATERS (2008), *available at* [http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Climate%20Protection%20Program/GHG\\_Mitigation\\_Phase2\\_001.ashx](http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Climate%20Protection%20Program/GHG_Mitigation_Phase2_001.ashx).

64. AVAILABLE AND EMERGING TECHNOLOGIES, *supra* note 53, at 17.

65. *Id.* at 21.

monitoring technology and data; 3) landfill practices (e.g., diverting organic waste, upgrading landfill covers to geomembranes, clay, biocovers, etc.); and 4) residual risks posed by HAP, will result in more stringent standards that actually set emission standards for HAP. This Notice seeks to initiate an RTR immediately.

### **CONTACT INFORMATION**

Pursuant to 40 C.F.R. § 54.3, the person providing this Notice is:

CALIFORNIANS AGAINST WASTE  
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### **COUNSEL**

We have retained legal counsel to represent us. Counsel's contact information is:

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CAW and its counsel would prefer to resolve this matter without litigation. We look forward to EPA coming into compliance within 60 days.

Sincerely,

/s/ Andrew Klimkowski

Andrew Klimkowski  
Attorney for CALIFORNIANS AGAINST WASTE

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