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September 13, 2016

The Honorable Jim Inhofe
Chairman
The Honorable Barbara Boxer
Ranking Member
Committee on Environment and Public Works
United States Senate

The Honorable Fred Upton
Chairman
The Honorable Frank Pallone, Jr.
Ranking Member
Committee on Energy and Commerce
House of Representatives

Subject: *Environmental Protection Agency: Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills*

Pursuant to section 801(a)(2)(A) of title 5, United States Code, this is our report on a major rule promulgated by the Environmental Protection Agency (EPA) entitled "Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills" (RIN: 2060-AS23). We received the rule on July 22, 2016. It was published in the *Federal Register* as a final rule on August 29, 2016. 81 Fed. Reg. 59,276.

The final rule promulgates a new subpart that updates the Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (Emission Guidelines). EPA reviewed the landfills Emission Guidelines based on changes in the landfills industry since the Emission Guidelines were promulgated in 1996. EPA's review of the Emission Guidelines for municipal solid waste (MSW) landfills considered landfills that accepted waste after November 8, 1987, and commenced construction, reconstruction, or modification on or before July 17, 2014. Based on this review, EPA determined that it is appropriate to revise the Emission Guidelines to reflect changes to the population of landfills and the results of an analysis of the timing and methods for reducing emissions. According to EPA, this final rule will achieve additional reductions in emissions of landfill gas and its components, including methane, by lowering the emissions threshold at which a landfill must install controls. This final rule also incorporates new data and information received in response to an advanced notice of proposed rulemaking and a proposed rulemaking and addresses other regulatory issues including surface emissions monitoring, wellhead monitoring, and the definition of landfill gas treatment system. The revised Emission Guidelines, once implemented through revised state plans or a revised federal plan, will reduce emissions of landfill gas, which contains both nonmethane organic compounds and methane. Landfills are a significant source of methane, which is a potent greenhouse gas pollutant. These avoided emissions will improve air quality and reduce the potential for public health and welfare effects associated with exposure to landfill gas emissions.

Enclosed is our assessment of EPA's compliance with the procedural steps required by section 801(a)(1)(B)(i) through (iv) of title 5 with respect to the rule. Our review of the procedural steps taken indicates that EPA complied with the applicable requirements.

If you have any questions about this report or wish to contact GAO officials responsible for the evaluation work relating to the subject matter of the rule, please contact Shirley A. Jones, Assistant General Counsel, at (202) 512-8156.

signed

Robert J. Cramer
Managing Associate General Counsel

Enclosure

cc: Nicole Owens
Director, Regulatory Management Division
Environmental Protection Agency

REPORT UNDER 5 U.S.C. § 801(a)(2)(A) ON A MAJOR RULE
ISSUED BY THE
ENVIRONMENTAL PROTECTION AGENCY
ENTITLED
“EMISSION GUIDELINES AND COMPLIANCE TIMES
FOR MUNICIPAL SOLID WASTE LANDFILLS”
(RIN: 2060-AS23)

(i) Cost-benefit analysis

The Environmental Protection Agency (EPA) prepared a cost benefit analysis associated with the proposed Emission Guidelines. The analysis is documented in the 2016 regulatory impact analysis (RIA), which is available in docket EPA-HQ-OAR-2014-0451 and is briefly summarized in the final rule. The final Emission Guidelines are expected to significantly reduce emissions of landfill gas (LFG) and its components, which include methane, volatile organic compounds (VOC), and hazardous air pollutants (HAP). According to EPA, landfills are a significant source of methane emissions, and in 2014, landfills represented the third largest source of human-related methane emissions in the U.S. This rulemaking applies to existing landfills that commenced construction, modification, or reconstruction on or before July 17, 2014, and accepted waste after 1987. EPA estimates 1,851 existing landfills that accepted waste after 1987 and opened prior to 2014. To comply with the emission limits in the final rule, municipal solid waste (MSW) landfill owners or operators are expected to install the least-cost control for collecting and treating or combusting LFG. The annualized net cost for the final Emission Guidelines is estimated to be \$54.1 million (in 2012 dollars) in 2025, when using a 7 percent discount rate. The annualized costs represent the costs compared to no changes to the current Emission Guidelines (i.e., baseline) and include \$92.6 million to install and operate a gas collection and control system (GCCS), as well as \$0.76 million to complete the corresponding testing and monitoring. These control costs are offset by \$39.3 million in revenue from electricity sales, which is incorporated into the net control costs for certain landfills that are expected to generate revenue by using the LFG to produce electricity.

According to EPA, installation of a GCCS to comply with the 34 Mg/yr (megagram per year) nonmethane organic compound (NMOC) emissions threshold at open landfills would achieve reductions of 1,810 Mg/yr NMOC and 285,000 metric tons methane (about 7.1 million metric tons of carbon dioxide equivalent) beyond the baseline in year 2025. In addition, the final rule is expected to result in the net reduction of an additional 277,000 megagrams of carbon dioxide (CO₂), due to reduced demand for electricity from the grid as landfills generate electricity from LFG. The NMOC portion of LFG can contain a variety of air pollutants, including VOC and various organic HAP. VOC emissions are precursors to both fine particulate matter (PM_{2.5}) and ozone formation. These pollutants, along with methane, are associated with substantial health effects, welfare effects, and climate effects. EPA expects that the reduced emissions will result in improvements in air quality and lessen the potential for health effects associated with exposure to air pollution related emissions and result in climate benefits due to reductions of the methane component of LFG. EPA estimates that the final rule's estimated methane emission reductions and secondary CO₂ emission reductions in the year 2025 would yield global monetized climate benefits of \$200 million to approximately \$1.2 billion, depending on the discount rate. Using the average social cost of methane (SC-CH₄) and the average social cost of CO₂ (SC-CO₂), each at a 3 percent discount rate, results in an estimate of about \$440 million in 2025 (in 2012 dollars).

According to EPA, the SC-CH₄ and SC-CO₂ are the monetary values of impacts associated with marginal changes in methane and CO₂ emissions, respectively, in a given year. It includes a wide range of anticipated climate impacts, such as net changes in agricultural productivity, property damage from increased flood risk, and changes in energy system costs, such as reduced costs for heating and increased costs for air conditioning. With the data available, EPA was unable to provide health benefit estimates for the reduction in exposure to HAP, ozone, and PM_{2.5} for this rule. EPA states that this is not to imply that there are no such benefits of the rule; rather, it is a reflection of the difficulties in modeling the direct and indirect impacts of the reductions in emissions for this sector with the data currently

available. Based on the monetized benefits and costs, the annual net benefits of the final guidelines are estimated to be \$390 million (in 2012 dollars) in 2025, based on the average SC-CH₄ at a 3 percent discount rate, average SC-CO₂ at a 3 percent discount rate, and costs at a 7 percent discount rate.

(ii) Agency actions relevant to the Regulatory Flexibility Act (RFA), 5 U.S.C. §§ 603-605, 607, and 609

EPA certified that the final rule will not have a significant economic impact on a substantial number of small entities under the RFA. EPA states that the final rule will not impose any requirements on small entities. Specifically, Emission Guidelines established under section 11(d) of the Clean Air Act (CAA) do not impose any requirements on regulated entities and, thus, will not have a significant economic impact upon a substantial number of small entities. EPA qualified that it is aware that there is substantial interest in the rule among small entities, and thus, conducted stakeholder outreach which was described in the final rule.

(iii) Agency actions relevant to sections 202-205 of the Unfunded Mandates Reform Act of 1995 (UMRA), 2 U.S.C. §§ 1532-1535

EPA states that this action does not contain any unfunded mandate of \$100 million or more as described in UMRA. The final Emission Guidelines apply to landfills that were constructed, modified, or reconstructed after November 8, 1987, and that commenced construction, reconstruction, or modification on or before July 17, 2014. Impacts resulting from the final Emission Guidelines are below the applicable threshold. EPA noted however, that the final Emission Guidelines may significantly or uniquely affect small governments because small governments operate landfills. EPA states that it consulted with small governments concerning the regulatory requirements that might significantly or uniquely affect them. EPA further states that in developing this rule, it consulted with small governments pursuant to a plan established under section 203 of UMRA to address impacts of regulatory requirements in the rule that might significantly or uniquely affect small governments.

(iv) Other relevant information or requirements under acts and executive orders

Administrative Procedure Act, 5 U.S.C. §§ 551 *et seq.*

On August 27, 2015, EPA published a proposed rule in the *Federal Register*. 80 Fed. Reg. 52,121. EPA responded to comments received in the final rule. EPA states that a complete list of the comments from state and local governments has been provided to the Office of Management and Budget (OMB) and has been placed in the docket for this rulemaking. In addition, the detailed response to comments from these entities is contained in EPA's Response to Comments document for this rulemaking.

Paperwork Reduction Act (PRA), 44 U.S.C. §§ 3501-3520

EPA states that the Office of Management and Budget (OMB) has approved the information collection activities contained in this rule under PRA and has assigned OMB control number 2060-NEW. The Information Collection Request (ICR) document that EPA prepared for the final Emission Guidelines has been assigned EPA ICR number 2522.02. According to EPA, the information required to be collected is necessary to identify the regulated entities subject to the final rule and to ensure their compliance with the final Emission Guidelines. The recordkeeping and reporting requirements are mandatory and are being established under authority of CAA section 114 (42 U.S.C. § 7414). All information other than emissions data submitted as part of a report to the agency for which a claim of confidentiality is made will be safeguarded according to CAA section 114(c) and EPA's implementing regulations at 40 C.F.R. part 2, subpart B. EPA states that the final rule ICRs will impact MSW landfills that accepted waste after November 8, 1987, and commenced construction, reconstruction, or modification on or before July 17, 2014.

EPA estimated that the number of respondents is 1,192 MSW landfills, and annually, the total estimated burden is 679,668 hours (per year) for the responding facilities and 17,829 hours (per year) for the agency. These are estimates for the average annual burden for the first 3 years after the rule is final. EPA estimated that the total estimated cost: \$45,225,362 (per year), which includes annualized capital or

operation and maintenance costs, for the responding facilities and 1,161,840 (per year) for the agency. EPA states that these are estimates for the average annual cost for the first 3 years after the rule is final.

Statutory authorization for the rule

EPA promulgated the final rule under the authority of section 111(d) of CAA. 42 U.S.C. § 7401 et seq.

Executive Order No. 12,866 (Regulatory Planning and Review)

EPA states that the final rule is an economically significant regulatory action under the final rule, and it was submitted to OMB for review. Any changes made in response to OMB recommendations have been documented in the docket.

Executive Order No. 13,132 (Federalism)

EPA concluded that the final Emission Guidelines may have federalism implications, because the rule imposes substantial direct compliance costs on state or local governments and the federal government will not provide the funds necessary to pay those costs. EPA provided a federalism summary impact statement. EPA states that it consulted with state and local officials, including their representative national organizations, early in the process of developing the proposed action to permit them to have meaningful and timely input into its development. In developing the regulatory options reflected in the proposed rule as well as this final action, the EPA consulted with 8 national organizations representing state and local elected officials. Additionally, the Environmental Council of the States, the National Association of Clean Air Agencies and the Association of State and Territorial Solid Waste Management Officials participated in pre-proposal briefings. Finally, in addition to these associations, EPA states that officials representing state and local governments across the nation participated in at least one of three pre-proposal briefings in the Fall of 2013 (September 10, 2013, November 7, 2013, and November 14, 2013). EPA states that it specifically solicited input prior to proposal from these intergovernmental associations, their members, and the participating state and local officials during and in follow-up to these briefings. As a result of the first phase of pre-proposal intergovernmental outreach, EPA received comments from entities representing state and local governments. EPA conducted an additional federalism outreach meeting on April 15, 2015.

The principal intergovernmental concerns raised during the pre-proposal consultations, as well as during the proposed rule's public comment period, include: implementation concerns associated with shortening of gas collection system installation and/or expansion timeframes; concerns regarding significant lowering of the design capacity or emission thresholds; the need for clarifications associated with wellhead operating parameters; and the need for consistent, clear, and rigorous surface monitoring requirements. In response to these comments and based upon the data currently available, EPA decided not to adjust the design capacity or significantly lower the emission threshold. EPA also decided not to adjust the time allotted for installation of the GCCS or expansion of the wellfield. In 80 Fed. Reg. 52,121 (the proposed rule), EPA highlighted specific concerns raised by commenters, which included state agencies as well as landfill owners and operators, about the interaction between shortened lag times and design plan approvals, costs and safety concerns associated with reduced lag times, and the need for flexibility for lag time adjustments. Wellhead operating parameters have been adjusted to limit corrective action requirements to negative pressure and temperature. EPA also acknowledged concerns about wellhead operating parameters in the proposed rule and reviewed public comments in favor of and against retention of the parameters during the public comment period. EPA states that it is finalizing a surface emissions monitoring approach for determining GCCS installation. EPA also finalized a subcategory for closed landfills. A complete list of the comments from state and local governments was provided to OMB and has been placed in the docket.

EPA included a certification from its federalism official stating that EPA had met the Order's requirements in a meaningful and timely manner when it sent the draft of this final action to OMB for review.