



**LOS ANGELES COUNTY
SANITATION DISTRICTS**
Converting Waste Into Resources

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Clerks' Office
Landfill Methane Regulation (LMR)
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Dear Representative:

Comments on CARB's "Proposed Amendments to the Landfill Methane Regulations"

Thank you for the opportunity to comment on the California Air Resources Board (CARB)'s *Proposed Amendments to the Regulation on Methane Emissions from Municipal Solid Waste Landfills*. We appreciate CARB's efforts and leadership in pursuing a better understanding of landfill methane emissions and identifying effective greenhouse gas (GHG) emissions reduction strategies needed to achieve carbon neutrality.

The Los Angeles County Sanitation Districts (Sanitation Districts) are a confederation of 24 special districts providing wastewater and solid waste management services to approximately 5.5 million people in 78 cities and unincorporated areas of Los Angeles County. Our mission is to protect public health and the environment through innovative and cost-effective wastewater and solid waste management and, in doing so, convert waste into resources such as recycled water, energy, and recycled materials. The Sanitation Districts' solid waste management system currently provides about one-fifth of the countywide solid waste disposal needs through the operation of two sanitary landfills and two materials recovery/transfer facilities. In addition, the Sanitation Districts also manages four closed landfills and operates two active landfill gas-to-energy facilities that convert landfill gas (LFG) into renewable energy.

On September 23, 2025, CARB released its proposed amendments to the Landfill Methane Regulations (LMR), which incorporate recent research and technological advancements in remote sensing to enhance the effectiveness of landfill methane emissions control measures. The proposed amendments also enhance surface methane monitoring procedures, improve alignment with relevant federal rules, and streamline compliance reporting. The Sanitation Districts agree that these proposed amendments to the LMR would potentially enhance the current landfill methane regulation in the areas of landfill methane monitoring, operational strategies, and reporting for compliance. However, the Sanitation Districts would like to offer the following comments on the proposed amendments to the current LMR for your consideration.

General Comments

The following are the Sanitation Districts' general comments on the proposed LMR amendments:

Short Timeline for Reviewing and Commenting

Stakeholders have only been given a period of less than fifty days to review and comment on the proposed LMR amendments. Considering the proposed amendments, with changes and new additions, are significant and extensive, and would result in profound impacts on the landfill industry, the time provided for reviewing and

commenting is insufficient for stakeholders to thoroughly review the proposed amendments and provide constructive and meaningful feedback. Therefore, the Sanitation Districts recommend that CARB consider extending the period for review and comment on the proposed LMR amendments by 60 days.

Providing a Reasonable Timeline for Implementation

Similar to the current LMR implementation and enforcement, it is expected that the implementation and enforcement of the proposed LMR amendments would be delegated to the local air districts. To avoid potential confusion and provide sufficient time for affected stakeholders to make necessary adjustments to comply with the amended rules, the Sanitation Districts recommend that the amended LMR not take effect until the process of granting and authorizing full delegation to the local air districts is completed.

Comments on Specific Proposed Amendments

The following sections present the Sanitation Districts' comments on specific issues of the proposed LMR amendments:

Section 95464(b)(1)(D): Gas Collection and Control System Requirement, General Requirements

The proposed amendments in this subsection require all individual control devices to be equipped with a flowmeter. Since flowmeters require specific lengths of straight piping for accurate readings, requiring a flowmeter for each individual device may not be feasible. There may be instances where, at existing flare stations and to obtain accurate readings, individual flowmeters can't be placed at each flare, but rather there would be a single flowmeter for the entire station. The Sanitation Districts understand the importance of flow metering as a crucial component in determining the effectiveness of a collection and control system. Therefore, the Sanitation Districts recommend that the LMR allow for one flowmeter per station with multiple devices where individual flowmeters for each device for existing collection systems are not feasible.

Section 95467: Semi-Continuous Operation and Permanent Shutdown

The proposed amendments in this subsection add requirements for semi-continuous operation for low-methane closed landfills and permanent shutdown. It is unclear whether existing collection systems, which are already operating on a semi-continuous basis, will be addressed. Requiring all systems to operate continuously when they're already operating on a semi-continuous basis may cause unintended consequences such as over-pulling of LFG, which may disrupt the anaerobic digestion process. Therefore, the Sanitation Districts request clarification to allow landfills that are currently operating on a semi-continuous basis without any emissions or odor issues to continue operating in this manner.

Section 95468: Alternative Compliance Options

The Sanitation Districts commend CARB on allowing alternative compliance options (ACOs) to accommodate site- and case-specific situations. However, the proposed amendment under this subsection states that ACOs must be approved, in writing, by CARB or its delegated agencies before they become effective. The proposed amendments further state that "the Executive Officer will review the requested alternatives and either approve or disapprove the alternatives within 120 days". In many practical cases, remedial actions, including alternatives, must be implemented as soon as possible to ensure compliance. Therefore, timely regulatory approval from ACOs is essential. The Sanitation Districts recommend that a written notification of the ACO's approval or disapproval from the Executive Officer be received within 30 days.

Section 95469 (a)(1)(B): Corrective Action Initiation and 10-Day Remediation Period

The proposed amendments under this subsection would require landfill operators to initiate corrective action within three days. While immediate measures, such as localized vacuum adjustments, can often be implemented quickly, other actions may require planning and coordination, necessitating additional time to initiate. Furthermore, for instances where there are multiple exceedances, facilities may not be able to comply with the three-day remedial initiation requirement.

The Sanitation Districts recommend that CARB consider revising the proposed LMR amendments to allow operators to initiate and complete corrective actions within the 10-day period, rather than requiring initiation within three days, provided emissions are controlled in the interim. Furthermore, to streamline the requirement, the Sanitation Districts recommends that the corrective action timelines should be aligned with existing federal and local standards (USEPA NESHAP Subpart AAAA and SCAQMD Rule 1150.1), which emphasize prompt action and re-monitoring rather than rigid initiation deadlines.

Section 95469 (a)(4): Recurring Surface Exceedances – Assessment and Monitoring Requirements

The proposed amendments in this subsection require enhanced monitoring for recurring exceedances, specifically five exceedances for instantaneous and three exceedances for integrated monitoring. For a 50,000 square-foot monitoring grid of a landfill, subsequent instantaneous exceedances within a grid may not necessarily be related or relevant. The current wording of the proposed LMR amendments does not adequately address this possibility, which could create significant and unjustified burdens for landfill operators to comply with the amended requirement. The proposed amendments under this subsection consider recurring exceedances solely on the basis of exceedance counts, without distinguishing between persistent, localized events and transient or dispersed occurrences.

The Sanitation Districts acknowledge that the grid is defined in the regulation as the smallest monitoring unit. Therefore, introducing sub-grid spatial criteria could add unnecessary complexity. Nevertheless, the description of recurring exceedance in the proposed amendments risks conflating isolated instantaneous exceedances with true recurring patterns. To better align the rule with actual monitoring practices and emission behavior, the Sanitation Districts recommend that CARB consider the following refinements:

1. Clarify that integrated exceedances caused primarily by a single elevated instantaneous reading should not, by themselves, count toward the recurring exceedance threshold.
2. Recognize the functional difference between instantaneous and integrated exceedances by applying separate, balanced thresholds that account for their differing purposes and data overlap (e.g., increasing the number of integrated exceedances required to trigger recurrence).
3. Define recurring exceedances based on persistence over time rather than unrelated exceedances within a grid, acknowledging that instantaneous exceedances are inherently localized and may not indicate widespread system deficiencies.
4. Maintain focus on identifying and correcting persistent, localized emission sources without imposing redundant monitoring or system-wide assessments triggered by unrelated or transient exceedances.

The Sanitation Districts recommend CARB to refine this amendment and clearly define what constitutes a recurring instantaneous exceedance within a grid. One possible rewording for defining a recurring instantaneous exceedance in a grid, for CARB's consideration, could be "... either five initial (i.e., not including re-monitoring) instantaneous exceedances ("five-initial-recurring-instantaneous-exceedance" event within a grid is defined as any or each instantaneous exceedance of these "five exceedances" must be in a close vicinity (say, within 20 feet radius) of at least any two of the other four instantaneous exceedance within a single grid over a rolling 12-month period)...."

This definition and approach would focus compliance resources on persistent, localized emission sources that represent actual control deficiencies, while avoiding unnecessary assessments triggered by isolated or unrelated exceedances dispersed across a large grid.

Section 95469(c): Component Leak Monitoring – Positive Pressure Components

The proposed amendment in this subsection requires leak checking of components under positive pressure at flare stations and energy recovery facilities. Flare station leaks can be checked and repaired quarterly without shutdowns. However, repairs at energy facilities typically require the entire plant to be shut down, which would reduce the beneficial use of landfill gas. SCAQMD Rule 1150.1 allows leak checks during planned outages for energy recovery facilities, reflecting operational realities. Aligning CARB's rule with this approach ensures regulatory consistency, operational safety, and effective leak control while maintaining consistent beneficial use of LFG.

Section 95469(e)(1): Positive Pressure Corrective Action – Inclusion of Zero Pressure

The proposed amendments in this subsection added zero-pressure reading as one of the criteria for wellhead adjustments and enhanced monitoring. Zero-pressure reading is common and doesn't necessarily indicate a risk of gas emission or ineffectiveness of a relevant collector. The inclusion of a zero-pressure reading requirement would not provide a meaningful benefit for emission control but would impose an unnecessary burden on landfill operators. Furthermore, correcting a zero-pressure reading may cause overpulling of LFG, which can introduce air into the waste mass. Therefore, the Sanitation Districts recommend that CARB exclude zero-pressure readings from the positive pressure corrective action requirements. This ensures that corrective actions are directed toward actual positive pressure conditions, improving regulatory clarity and avoiding unnecessary procedural actions. Under USEPA NSPS Subpart XXX and SCAQMD Rule 1150.1, corrective actions apply only to actual positive-pressure conditions, not to zero-pressure readings. Aligning Section 95469(e) with these well-established regulations would provide consistency across regulatory agencies.

Section 95469(e)(2): Recurring Pressure Exceedances

The proposed amendments under this subsection require a collection system assessment within 30 days after the third positive pressure reading in a 12-month period, followed by weekly monitoring and, if necessary, continuous instrumentation. However, short-term positive pressures often occur due to normal operations—such as daily barometric changes, condensate buildup, or routine wellfield adjustments—and do not indicate system failure or increased surface emissions. Requiring one year of weekly monitoring or continuous pressure measurement based on these routine transient conditions would impose significant operational and financial burdens. Operators might respond by unnecessarily increasing collector vacuum to offset positive readings, potentially causing air intrusion, higher oxygen levels, increased wellhead temperatures, and reduced methane quality. The Sanitation Districts recommend that CARB provide regulatory flexibility in addressing issues associated with pressure:

1. Acknowledge that short-term positive pressures due to diurnal or barometric fluctuations are expected and do not necessarily indicate a system deficiency.
2. Allow operators to exclude isolated, short-duration pressure fluctuations from recurring exceedance determinations.
3. Require weekly monitoring only where there is evidence of persistent, unresolved pressure issues, rather than applying it automatically after three positive readings.
4. Implement mandatory continuous pressure monitoring to wells with chronic pressure exceedances, not those with intermittent or weather-related fluctuations.
5. Clarify that recurring positive pressure provisions should target actual operational deviations rather than short-term fluctuations caused by normal environmental or operational factors.

Section 95469(e)(3): Wellhead Monitoring

This subsection of the proposed amendments requires a series of additional wellhead monitoring and remedial actions to reduce elevated landfill gas temperature and oxygen content.

Wellhead Monitoring - Oxygen

Oxygen concentration above 5% alone is not indicative of a possible landfill fire. Some LFG collectors are installed for the protection of groundwater quality, as well as to control lateral and subsurface gas migration. Some collectors will typically have higher oxygen concentrations due to the use of higher vacuum levels to mitigate gas migration. If a strict 5% oxygen limit is imposed, the vacuum level at these gas migration control collectors would need to be tuned down. The vacuum reduction would decrease the collector's radius of influence, compromising gas migration control and potentially allowing methane and other landfill gases to migrate offsite, creating hazards to human health. Furthermore, to maximize energy recovery benefits with improved gas quality while maintaining compliance, landfill operators are motivated to maintain cover integrity and fine-tune the collection system to minimize air intrusion and gas emissions.

In addition, the U.S. Environmental Protection Agency (EPA) removed the operating standard for oxygen and nitrogen at gas collectors from the Municipal Solid Waste Landfills: New Source Performance Standards (NSPS), Emission Guidelines (EG) to allow operators to employ site-specific landfill gas control measures for limiting surface gas emissions and controlling subsurface migration by installing shallow gas collectors that often operate above the 5% oxygen threshold.

For the reasons discussed above, the Sanitation Districts strongly urge CARB to impose oxygen concentration limits on wellheads with temperature readings above 145°F only instead of imposing oxygen concentration limits on all wellheads. This approach will provide more emphasis on resolving wellheads with actual issues, rather than risking unintended consequences such as subsurface migration and groundwater contamination.

Wellhead Monitoring - Temperature

Since wellhead temperature monitoring is already required and enforced by the EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations, to avoid complexity and redundancy in regulatory compliance, the Sanitation Districts recommend that CARB consider aligning the LMR with the NESHAP.

Section 95469(f): Semiannual Well Liquid Level Monitoring

This subsection of the proposed amendments requires liquid level monitoring at least twice a year, with the potential to increase the frequency and dewatering requirement for gas collectors where liquid levels exceed 50% of the perforated area. Since high-level liquid could be caused by other environmental factors, such as diurnal barometric pressure changes, requiring additional liquid monitoring at all wellheads would create an unnecessary and unjustified burden on operators. The Sanitation Districts acknowledge that there is equipment that can automatically measure the liquid level. However, such equipment will require additional infrastructure, including power supply, data collection, and internet connection, which will incur substantial capital costs. Furthermore, some landfill locations may not have stable internet services, which are required for data compilation. Therefore, the Sanitation Districts strongly recommend that CARB require liquid level monitoring only when a gas collector exhibits persistent performance issues, such as elevated temperatures, positive pressure, or complaints of odor.

Section 95469(g)(1): Gas Collection System Pressure Monitoring

This subsection of the proposed amendments requires all wells to be re-tuned within one calendar day of the system pressure change. The Sanitation Districts agree that the collection system pressure is a vital component of effective landfill gas management. However, we are greatly concerned about requiring all well to be re-tuned

within one calendar day. For a landfill with a large number of wells, many of which exceed 2,000, this requirement is simply impossible to meet. Furthermore, it's unclear how re-tuning every well after each pressure adjustment would improve the effectiveness of the landfill gas collection system performance. We believe that this requirement would impose an unjustified burden on operators without any added benefit. Therefore, the Sanitation Districts strongly urge CARB to remove this subsection of the proposed amendment.

Section 95470: Recordkeeping and Reporting Requirements

The Sanitation Districts support CARB's efforts in promoting and expanding digital reporting. A standardized digital reporting process would help improve reporting clarity and efficiency, facilitating accelerated data review and resolution of problems. However, the Sanitation Districts recommend that CARB reduce the reporting frequency from quarterly to annual to be in line with other annual reporting requirements. The Sanitation Districts also recommend that the proposed record-keeping and reporting requirements be aligned with existing SCAQMD 1150.1 electronic submissions to avoid duplication. Additionally, clarifying acceptable data formats and QA/QC requirements would be beneficial in reducing administrative burden.

Section 95471: Test Methods and Procedures

This subsection of the proposed amendments outlines the requirements for cover integrity assessment, which includes the thickness of cover and grain size. The assessment, as described in the amendment, will likely require the use of equipment to penetrate the cover, which may compromise the final cover. Furthermore, it may introduce air into the waste mass. Therefore, the Sanitation Districts strongly urge CARB to provide flexibility for cover integrity assessment.

In summary, the Sanitation Districts commend CARB staff for their proactive approach in strengthening the Landfill Methane Regulation (LMR). The Sanitation Districts strongly support CARB's initiatives to protect public health and the environment by reducing methane emissions and promoting safe, effective landfill operations. We value the opportunity to collaborate with CARB during this rule-making process and remain committed to providing input that ensures practical and sustainable implementation of these important measures.

Thank you for considering our comments. If you have any questions or require additional information, please call me at (562) 908-4288, extension 2126.

Very truly yours,

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