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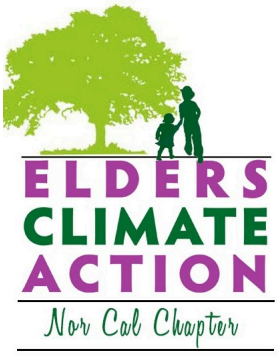
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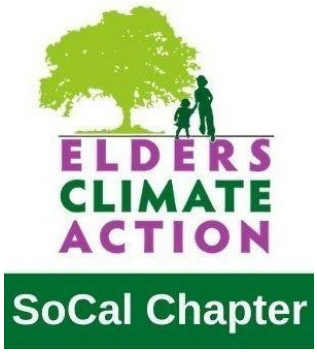
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April 17, 2026

Chair Lauren Sanchez
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: 15-Day "Proposed Amendments to the Regulation on Methane Emissions from Municipal Solid Waste Landfills" Comments

Dear Chair Sanchez,

The undersigned organizations appreciate the opportunity to comment on the Proposed Amendments to the Landfill Methane Regulation. California's Landfill Methane Regulation, when completed, will serve as a model for the entire country to follow, so an air-tight rule is critical. This set of amendments includes a few important improvements in reaction to the enforcement and implementation reality on the ground. The majority of these amendments, though, represent a loosening of the rules that guard against dangerous landfill emissions.

We understand that *some* areas require flexibility and appreciate the tailored approach staff took. However, a few specific changes represent unreasonable leniency that endangers landfill-adjacent communities and risks opening the door to ongoing emissions. Beyond these critical, immediate improvements, we have outlined a number of flexibilities that we encourage the staff and the board to re-examine the benefit of when you return to report on and update the rule in mid-2028.

When landfill emissions go undetected, nearby residents – especially young children – are among the first and most severely affected. Methane and toxic co-pollutants released from landfills can worsen asthma, harm developing lungs, and degrade local air quality. In California, over 1.6 million children under the age of five live near a municipal solid waste landfill[1].

Protecting communities and vulnerable populations from these exposures requires an emissions monitoring and capture system that identifies and mitigates every leak and ensures swift corrective action.

Unfortunately, the Proposed Amendments weaken some key provisions of the original proposed regulation, straying from CARB's mandate to deliver transformative emissions reductions and prioritize the health of California's most impacted communities. Chief among these are:

[1] U.S. Census Bureau. *American Community Survey (ACS) 5-Year Estimates, 2023.* Census tract boundaries defined using U.S. Census Bureau TIGER/Line® Shapefiles, 2023

- Large downtime allowances inconsistent with Federal rules.
- Lengthy uncontrolled period for new waste.
- Potential perpetual loophole for well non-function.
- Large unscanned areas around exceedances detected during SEM

The sections below provide detailed comments organized by importance and immediacy, elaborating on our key recommendations, highlighting select improvements, and identifying elements that should be re-evaluated at the 2028 review.

Regulatory Holes That Pose an Immediate Risk

These four changes significantly weaken the Landfill Methane Regulation's ability to protect people and the planet from fugitive emissions.

1. **Extended 180 day and 30 foot timeline for the installation of gas collection system**
   The initial draft regulation set a strong standard for well installation in areas of new waste placement. In section 95464(a)(5), it stated that horizontal collection wells must be placed in areas of new waste placement for large landfills. These horizontal wells installed right from the start ensure thorough capture of landfill gas as the waste begins undergoing rapidly accelerating anaerobic decomposition.

   The Proposed Amendments instead state that any kind of well may be installed, and operators have 180 days to do so. Additionally, gas collection does not need to begin until 30 feet of waste have been added. This allows a significant amount of emissions to escape the working face. Anaerobic decomposition, although not yet at its peak, begins well before these 180 days[2] and can start emitting through the working face. In areas of new waste placement, there is no impenetrable cap to prevent fresh landfill gas' escape to the atmosphere. This amended timeline allows the active face to release significant emissions and should be shortened to 90 days.

2. **Loophole in well downtime allows for continuous non-operation**
   In section 95464(e)(3), the amended regulations exempt wells shut down for repair, construction, or catastrophic events from all of the meaningful GCCS requirements, as long as no more than 10 wells are down simultaneously, *only* counting wells that are down for more than 24 hours, among other requirements.

   This appears to open a loophole wherein operators may turn off unlimited amounts of wells for a rolling sub-24 hour window. Half of the collection devices could be shut down for 23 hours, then turned back on as the other half are shut down for the next 23 hours.

[2] Scarpelli, T. R. et. al. Investigating Major Sources of Methane Emissions at US Landfills. *Environmental Science & Technology.* 2024 58 (49), 21545-21556 DOI: 10.1021/acs.est.4c07572

This allows too much room for abuse. The additional recording requirements for well disconnection in 95464(e)(5) are a notable check against this weakness, but an effective regulation can not rely on an enforcement officer combing through every line of operational history and choosing to pursue enforcement against an subjective abuse of the rules.

3. **Insufficient five foot radius for scanning after SEM exceedance**
   Surface Emissions Monitoring (SEM) is already performed at a large grid size on an infrequent basis, allowing for emissions in large parts of the landfill to go undetected for long periods of time. In the current SEM procedure, there is over 20 feet between where handheld methane detectors take measurements, as technicians only have to cover the landfill with a 25 foot grid. To help fill this gap, technicians are required to scan the area around SEM exceedances to find the entire area of the breach.

   Section 95471 (c)(2)(B) of the Proposed Amendments clarifies a minimum radius area that must be scanned for further exceedances around a SEM exceedance. Clarifying a minimum size is a strengthening improvement. However, this size chosen is much too small. With over 20 feet of unmonitored surface on either side of the SEM path, larger areas around a known compromised location should be checked. A 15-foot radius check should be required around known deficiencies.

4. **Large downtime allowances inconsistent with Federal rules**
   The Federal regulation for landfill gas emissions[3], along with accompanying case law, clearly disallow broad downtime allowances[4], except in the case of uncontrollable circumstances such as natural disasters. Therefore, allowances of 120 and 240 hours for GCCS downtime in section 95464 (b)(1)(A) of the California rule actually set a lower bar than the Federal standard. Other parts of the regulation already allow flexibility where it is reasonable, and the section where these allowances are described already allows for downtime outside of the control of the operator. Adding another 120 hours of downtime allows an unacceptable amount of fugitive emissions to harm communities and the environment. Instead, CARB should allow a case-by-case review for downtime requests beyond the uncontrollable conditions described in section 95464 (b)(1)(A).

   Additionally, the threshold for the higher 240 hour limit is based on methane collection mass. This means that landfills that are leaking or combusting methane through a subsurface elevated temperature reaction may actually fall back into a bracket with higher downtime allowances. The presence of a subsurface elevated temperature reaction should be factored into any methane tonnage threshold for enforcement.

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[3] Federal Register, March 11, 2021, https://www.govinfo.gov/content/pkg/FR-2021-03-11/pdf/2021-04936.pdf

[4] Federal Register, August 29, 2016, https://www.govinfo.gov/content/pkg/FR-2016-08-29/pdf/2016-17687.pdf

Regulatory Improvements that Address Implementation Challenges

The amendments also include some important improvements that recognize real-world roadblocks to effective enforcement. The below changes show a keen understanding of the weaknesses in the past regulation that have allowed a disconnect to develop between the reported outcomes and on-the-ground realities. These are important improvements that should be maintained:

1. **Successful compliance inspections as an element of the overall compliance record**
   Throughout the regulation, there are multiple places where a continuous clean compliance record can trigger relaxed monitoring or operating requirements. Most of the data underlying these records is self-monitored. The amended regulation makes the important clarification that data from compliance inspections must also match the clean record of the reported data in order for operators to qualify for relaxed requirements. This is absolutely critical, as oversight and enforcement entities are greatly weakened without it. Regulators' data, as well as the landfill's self-reported data, must be considered for regulatory landfill management decisions.

2. **Transparency with CARB about Higher Operating Value waivers**
   Landfills are regulated by multiple agencies at multiple levels of government. This makes it very difficult for any oversight entity, whether a private citizen or a government agency, to track down exactly how a landfill has been allowed to operate outside of the parameters set in regulation. The Proposed Amendments' requirement for higher operating value requests to be disclosed to CARB centralizes these many data sources into one, relatively transparent place. This is critical for enforcement and public oversight.

3. **Wetting the landfill surface qualifying as a rain event**
   CARB already acknowledged that a wet landfill surface changes emissions readings, which is why SEM can not be performed after a rain event. An amendment to section 95471 (c)(1)(E) clarifies that artificial wetting of the landfill surface also precludes SEM. This closes an obvious loophole and is an important improvement.

4. **Re-review by the Executive Officer of further semi-continuous operation data**
   The regulation allows the Executive Officer to review previously-approved semi-continuous operation requests. The amended regulations add in section 95467 (c) additional data outside of just the application that can be considered in this review, including monitoring, recordkeeping, and reporting data. This is paired with a requirement in section 95470 (b)(3)(G) to report gas collection data at semi-continuous

operations. Together, these allow for a more complete review of operations attempting to prove suitability for continued semi-continuous operation.

5. **Carbon monoxide trigger for downwell temperature monitoring**
   Carbon monoxide (CO) is an important sign of combustion reactions. The amendment to section 95464(b)(6) to use 100 ppmv of CO as a trigger for downwell temperature monitoring is a responsible layer of protection against runaway elevated temperature reactions.

Regulatory Flexibilities to Review in 2028 Update

When the board approved the LMR in late 2025, it included in the board resolution direction for the Executive Officer to report on Landfill Methane Regulation implementation, including the state of the science on emissions monitoring technologies, in mid-2028. It is imperative that CARB does follow through with a meaningful re-analysis of this rule's progress during 2028. Because California is taking an important leadership role on landfill regulation, some of the specific provisions in the regulation are yet untested. Therefore, it is imperative that we analyze our own rule's impact in the real world, including ways it may have been worked around.

A number of the changes in the Proposed Amendments represent a clear relaxation of the regulation, but their impact is yet unclear. For the below amendments, we suggest that implementation impact of each change is carefully watched over the year and half of implementation before the 2028 review. If any of these changes do prove to be a significant weakness, they can be thoughtfully updated in 2028.

1. **The hour delay to shut down gas mover systems after GCCS shutdown allows offgassing**.
   The initial draft regulation set a strong protection against offgassing by stating that gas movers had to be immediately shut off when the GCCS system stopped functioning. The amended regulation allows an entire hour of potential dumping of gas and heat before mover shutdown. This should be limited to a timeframe realistic to automated shutoffs — a matter of minutes. Landfill operational data should be analyzed for incidence of significant emissions events from this hour window in 2028.

2. **The narrowing of cover integrity testing to only daily and intermediate ignores large areas that have proven problematic at some landfills**.
   Large areas of landfills sit under final cover for years before the entire landfill enters semi-continuous operation and must do final cover tests under this regulation. Therefore, consistent testing of this cover is crucial to preventing emissions. The amendment in section 95464(b)(6) to limit cover integrity checks to daily and intermediate cover leaves

consistent final cover checks out of standard monitoring. The existence of overlapping SWRCB requirements does ease the impact, but those regulations are not tailored towards emissions. The incidence of leaks from final cover on operational landfills should be evaluated in 2028.

3. **The increased number of allowed high oxygen readings allows leaks to persist**. The amended language in section 95469 (e)(6) allows half of the monthly monitoring events at a well in a given year to return elevated oxygen levels before enhanced monitoring must begin. This doubles how long a clear sign of an issue can be detected before action is taken. The impact of this leniency should be analyzed in 2028.

4. **The temporal constraints for liquid monitoring risk missing the intended rain correlation.**
   The amendments in section 95469 (f) limit liquid monitoring to one event done between January and April. This is obviously done in order to ensure liquid monitoring was done after rain. Unfortunately, with the increased temporal inconsistency in California's rain patterns, this change does not guarantee rain will have happened in the months preceding the monitoring event. Instead, the regulation could require that liquid monitoring be done within a certain number of days following a precipitation event of at least a certain magnitude, unless that area does not receive such an event between January and April. The ability of the existing amendment to force representative liquid monitoring events should be evaluated in 2028.

5. **The allowance of decreased downwell monitoring solely from decreased CO levels risks pipes melting and temperatures running away**.
   The amended language in section 95469 (e)(3)(C) dances dangerously close to potential runaway issues within landfills. By allowing downwell temperature monitoring to move to semi-annually when carbon monoxide levels fall—even when downwell temperatures are above 145 degrees Fahrenheit—the regulation allows an already extremely hot section of the landfill to go unmonitored for long periods of time. PVC, often used in collection systems, begins to melt around 145 degrees, so allowing the situation to continue above that threshold risks compounding failures below ground. The US EPA has directed some landfills experiencing problematic subsurface temperatures to conduct downwell temperature monitoring once every 90 days. Using the US EPA's requirements and keeping in mind a continuity of agency requirements for operators, CARB should change the extended 6 month period for downwell temperature monitoring to every 90 days.

   Additionally, landfill chemistry is too complicated and poorly understood to determine that all high heat reactions will subside purely based on one chemical's concentration. Carbon monoxide's ability to accurately predict decreasing temperature trends, as well as the 145 degree limit to cease downwell temperature monitoring, should be evaluated in 2028.

This update is an opportunity for California to solidify its leadership on climate action and protection of disadvantaged communities, particularly in a time when many environmental rules have been weakened at the federal level. The initial 45-day amendments make significant progress in improving data rigor, temperature response, and trend monitoring of landfill data, and the 15-day changes show responsiveness to on-the ground implementation challenges. Our recommendations focus on the few changes that risk undermining the regulation's intended impact on methane emissions and community protection. We truly appreciate staff's diligent, careful work on this regulation and look forward to a stronger final rule that prioritizes both environmental and public health protections.

Thank you for your consideration. We look forward to working in partnership with CARB on implementing this important regulation.

Sincerely,

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