

Some claim federal law regarding post-closure care provides no guidance on how states should assess for human or environmental health impacts.

Arlene Karidis | May 28, 2019

The U.S. Environmental Protection Agency's (EPA) Resource Conservation and Recovery Act (RCRA) requires landfill operators to maintain post-closure care for 30 years, though states can adjust up or down according to when they determine ending this care will not threaten human health or the environment. But that's about as far as the directive goes, and some industry stakeholders say it's not enough.

“RCRA provides no guidance on how states should assess for impact on human health or the environment. Nor does it give other guidance on how to determine when to transition from active post-closure care to custodial care, which has left a lot of ambiguity and uncertainty for operators. Meanwhile, half the states have not changed or improved what RCRA Subtitle D lays out, which is 30 years of post-closure care, or according to the state,” says Jeff Murray, associate and senior project manager at HDR .

With little direction, regulators tend to default to an extension of terms, says Michael Caldwell, director of groundwater and technical programs for Waste Management. He cites New Jersey as an example where a few sites have reached or will soon reach the end of the 30-year post-closure care term. But it looks as though the state may lengthen that timeframe 10 years for some sites.

He emphasized a need for flexibility to implement waste degradation strategies that make sense on a site-specific basis, for instance considering climate and waste mix.

“This addresses the question, ‘If we had performance-based waste degradation targets, would we operate our landfills differently today?’” he said.

Both Caldwell and Murray were actively involved in developing a recent joint position of the Solid Waste Association of North America and the National Waste & Recycling Association that calls for objective, scientific methodology to determine when post-closure care should end .

“We are recommending for industry and state regulators a performance-based evaluation process looking at site-specific data like landfill gas generation and leachate generation, groundwater quality and cover system’s performance,” says Murray. “We are calling on landfill operators to collect the data, and we want them to work with their state agencies, at a regional level, to develop the guidance to determine when post-closure care can be terminated. We don’t believe this direction will come from the top [EPA].”

The 30-year term was established when lined landfills were new. For how long and well these emerging systems would perform in the field was yet to be seen.

“The whole purpose of the post-closure care term is to provide enough time for landfills to become stable. One way to assess is by determining if functional stability has been achieved, which entails looking at performance metrics like leachate management, settlement, landfill gas control and groundwater monitoring,” says Bob Gardner, a senior vice president at SCS Engineers.

Looking at these metrics, once it’s determined that functional stability has been achieved, these active systems may be able to be turned off, with only passive controls like cover remaining in place. Monitoring may be done less frequently or not at all.

“EPA acknowledges that back in the 1980s, it did not know how systems, primarily liner systems, would perform under new Subtitle D rules. But based on monitoring of these systems over the past 25 years, we know that they perform well to prevent migration of contaminants to groundwater,” says Gardner.

Some industry stakeholders argue that liners have proven out to a degree that if operators gathered good data over time, they may be able to show that it's feasible to transition to custodial care sooner.

A few states, such as Florida and Washington, assess based on functional stability. While other states, like Kansas and Wisconsin, assess based on organic stability. Organic stability is considered to be achieved when landfill mass has biodegraded to the point that exposure to the undecomposed portion does not present serious risk to human health and the environment.

There are different thoughts on functional versus organic stability, though both track trends of key degradation indicators, such as leachate quality and landfill gas production and quality. And both approaches have significant data collection requirements.

The idea is to have tools and methods to assess for individual scenarios to determine fitting post-closure care terms.

What the industry needs, to the degree possible, is certainty, says Caldwell.

“A performance-based process with site-specific data can provide that certainty. It allows regulators to make defensible permit decisions, benefits owners/operators with cost planning beyond the current 30-year term (if needed) and benefits the public looking for beneficial reuse options for closed landfill assets,” he says.

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