Ask a Regulator: Navigating Compliance & Industry Challenges

Annette DeHavillard | Bradford Ricks | Todd Sax

Ohio EPA / Virginia DEQ / California EPA

Moderated by Timothy D. Stark, PhD

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AI SUMMARY

Executive Summary

The FGI's tenth and final webinar of 2026 brought together Annette DeHavillard of Ohio EPA and Bradford Ricks of the Virginia Department of Environmental Quality for a discussion of landfill compliance, containment performance, and long-term responsibility. Moderated by Timothy D. Stark, the session paired the regulators' opening perspectives with audience questions on financial assurance, PFAS, liner and cover alternatives, and post-closure care. Scheduled panelist Todd Sax of California EPA could not attend because of an active landfill incident.

A central theme was the connection between operational problems and financial exposure. Ricks described how elevated landfill temperatures can increase leachate volumes and strength, disrupt disposal arrangements, and drive costs far beyond the funds available for closure and post-closure care. DeHavillard emphasized industry's role in improving rule development and the distinction between an enforceable requirement and a regulator's experience-based recommendation.

Across the questions, the panel repeatedly returned to site-specific evidence. Thirty years of post-closure care does not automatically establish that a landfill can be released from oversight. Alternative liners, covers, and operating plans depend on the applicable state framework and the demonstration supporting the proposal. Monitoring, realistic cost estimates, and contingency planning remain essential as facilities and waste streams change.

Key Takeaway for Engineers & Students

Containment performance, operating flexibility, and financial responsibility must be considered together. A permitted design still requires monitoring and maintenance, and a financial assurance estimate must reflect credible future costs. Engage regulators early, distinguish requirements from recommendations, and plan for changes in leachate disposal, gas control, and post-closure obligations.

1. Working with Regulators

1.1 Industry Input Improves Rule Development

DeHavillard encouraged practitioners to participate in rule development. Regulators understand the regulatory framework, but engineers, manufacturers, and operators may recognize technical consequences that are not obvious when language is drafted. Feedback can improve terminology and prevent a rule from unintentionally excluding a beneficial design or practice.

1.2 Requirements, Recommendations, and Public Data

DeHavillard distinguished a finding that a proposal fails a rule standard from advice based on prior experience. A suggestion about a potentially better approach should not be interpreted as a design guarantee. Clear communication helps both sides understand whether a statement identifies an enforceable obligation or offers professional experience.

She also described regulatory agencies as a substantial source of publicly available monitoring and operating data. Those records may support research, although assembling them into a consistent dataset can require additional work.

2. Elevated-Temperature Landfills and Operational Control

2.1 Gas Extraction, Liquids, and Stabilization

Ricks identified stabilization as a recurring landfill challenge, with elevated-temperature conditions adding further complications. He stressed the ability to adjust gas extraction when conditions change. Energy-recovery contracts can limit an operator's control of the well field, creating difficulties if the site needs different extraction settings to manage rising temperatures.

Leachate management was a parallel concern. Ricks reported that both liquid volumes and concentrations can increase as temperatures rise. A wastewater treatment plant that previously accepted the leachate may become unable or unwilling to continue. Backup disposal arrangements and adequate liquid-storage planning were therefore recurring recommendations.

2.2 Costs Can Change Much Faster Than the Original Plan

Ricks relayed owner estimates of approximately $25 million and $100 million to address elevated temperatures at two other Virginia facilities. These were illustrative, speaker-reported costs, not typical project budgets. The broader point was that an abnormal operating condition can fundamentally change the resources needed to stabilize, close, and maintain a landfill.

3. Financial Assurance and Post-Closure Care

3.1 The Gap Between Required Funds and Actual Exposure

Ricks described a Virginia landfill whose owner had entered bankruptcy amid elevated-temperature problems and was alleged to have abandoned the site. He estimated that the available assurance covered roughly one-tenth of anticipated closure and post-closure costs, while emphasizing that the total remained uncertain. The discussion avoided detailed claims about ongoing litigation.

The example illustrated why the existence of a bond does not by itself establish that sufficient funding will be available. Ricks called for accurate financial assurance mechanisms and industry cooperation before emergency conditions force rapid policy decisions. Both panelists confirmed that their agencies review and question financial assurance cost estimates.

3.2 Thirty Years Is Not an Automatic Release

Both states had released some older facilities from oversight, but neither panelist supplied a verified count. Ricks stressed that many of those sites were small, municipally operated landfills from an earlier regulatory era. Their experience may not predict the needs of modern facilities hundreds of feet tall or hundreds of acres in area.

Continuing groundwater contamination, gas migration, or other unresolved conditions can prevent termination of post-closure care. Ricks described partial termination, in which oversight ends for a satisfactory component while continuing for another. He did not identify an impending Virginia rule change to the standard period; his concern about larger facilities was a practical assessment.

3.3 When Obligations Outlast the Available Money

DeHavillard distinguished an operating owner maintaining financial assurance from a situation in which the state must draw on that assurance after abandonment or bankruptcy. For an owner that remains responsible, Ohio can require assurance to be maintained when unresolved problems prevent release. If the state is already paying for care and funds run short, it may have to prioritize the most consequential problems; other funding sources are not guaranteed.

3.4 Responsibility Beyond Post-Closure Care

Ohio had discussed environmental covenants as a possible means of continuing maintenance obligations, but DeHavillard described the idea as inactive at the time. Ricks described deed notification and restrictions on construction in Virginia, rather than a separate custodial-care program beyond those measures. The panel did not present a uniform approach for all states.

4. PFAS, Leachate Disposal, and Changing Waste Streams

Ricks described PFAS-related concerns about wastewater sludge as one reason treatment plants were scrutinizing incoming landfill leachate. He anticipated a growing need for pretreatment and again emphasized contingency disposal options. DeHavillard said Ohio's emphasis had been protecting drinking water and watching developments in sludge disposal.

DeHavillard also raised a geotechnical consequence: diverting more wet sludge into landfills could change waste strength and slope behavior. The discussion linked contaminant management to the physical properties of the waste mass, rather than treating disposal policy and stability as separate issues.

5. Alternative Liners, Covers, and Operating Plans

The responses below describe the panelists' experience and recollections during the webinar. They are not a substitute for a project-specific permitting decision.

Topic	Ohio perspective	Virginia perspective
Synthetic turf final covers	DeHavillard said Ohio accepts such systems as alternatives. Long-term replacement needs and who will fund them remained concerns.	Ricks was not aware of an approval request, but said a proposal demonstrating a suitable alternative to the required cap could be considered.
Geosynthetic clay liners (GCLs)	Ohio was described as an early adopter that continues to accept GCLs. DeHavillard noted greater flexibility outside municipal solid waste applications.	Ricks described GCLs as standard and said alternatives are considered case by case based on equivalent or better protection.
Settlement accommodation	DeHavillard recalled allowing a plan at one facility. That experience did not establish a universal five-year allowance.	Ricks was not aware of approving a prospective plan to fill above final grade and rely on future settlement to reach it.
Action leakage rates for double liners	No state calculation standard was identified for the specific drainage-geocomposite question; the design would need justification.	No state standard answering the requested calculation method was identified. Ricks described double liners used for particular permitting needs.

5.1 An Unresolved Detail: Ohio's GCL Design Section

The discussion referred to a historical five-foot soil-liner section in which a GCL could substitute for two feet of soil. DeHavillard said the soil requirement had since been reduced but could not confirm the current section from memory. The exact configuration was deferred to the follow-up podcast. The webinar therefore does not establish a current numerical Ohio design requirement.

5.2 Leachate Head and Drainage-Geocomposite Thickness

The moderator asked about the basis for the one-foot leachate-head criterion and whether a thinner drainage geocomposite would reduce the allowable head to its own thickness. DeHavillard attributed the one-foot criterion to the federal framework and answered no to the proposed thickness-based substitution. The panel did not develop a new design calculation or resolve the historical basis in detail.

5.3 Acceptance Depends on the Demonstration

The recurring distinction was between considering an alternative and granting blanket acceptance. The panel described flexibility in several areas, while also identifying unresolved design details, different state practices, and concerns about long-term upkeep.

6. Long-Term Integrity and Performance Monitoring

6.1 Weld Testing Does Not Establish a Service-Life Prediction

An audience question distinguished installation-time seam strength tests from proof that a weld will remain intact throughout post-closure care. The panel did not identify a program requiring seam coupons to be retested before entry into post-closure care. DeHavillard contrasted the relatively static setting of a bottom liner with a cap whose condition must be observed over time.

Ricks emphasized groundwater monitoring as a means of identifying unintended releases when containment does not perform as intended. This response described how performance is assessed; it did not establish that passing an initial mechanical test proves a particular long-term weld life.

6.2 Diffusion and Evidence of Performance

Asked about diffusive leakage involving GCLs, DeHavillard acknowledged the mechanism and noted that diffusion can also concern geomembranes. The response again emphasized groundwater monitoring and leak detection. The panel did not offer a diffusion-based design method or quantify long-term transport.

6.3 Groundwater Setting and Inward-Gradient Sites

The groundwater discussion centered on aquifer separation, variances, and experience with inward-gradient facilities. DeHavillard recalled a 15-foot Ohio aquifer setback; Ricks tentatively recalled two feet in Virginia. Those figures were spoken recollections, not a complete statement of applicable siting criteria.

Ricks described a Virginia quarry landfill with elevated-temperature problems and expressed reservations about repeating that experience. He also described monitored underdrains at some sites as a means of detecting contamination. The discussion did not establish that an inward gradient alone ensures acceptable long-term performance.

7. Waste Processing and Regulatory Coordination

7.1 Solidification and Acceptance of Liquid Wastes

Virginia was described as having permitted liquid-solidification operations at some landfills. Ricks identified the paint filter test as an acceptance criterion and described solidification before disposal when that criterion is not met, alongside certain case-specific special-waste authorizations. The panel did not provide a comprehensive answer on non-hazardous secondary-material exemptions.

7.2 Leachate Recirculation and Concentration

DeHavillard said leachate recirculation had declined in Ohio after it was implicated in an early elevated-temperature landfill event. She could not quantify a trend in solidification facilities. Ricks described increased interest in concentrating leachate to reduce liquid volume, while recognizing that a more concentrated residual still needs management.

The exchange also exposed an administrative issue: responsibility for overseeing solidification can fall between solid-waste and wastewater programs. The permitting path and responsible agency division may need clarification, particularly for activities at a landfill.

8. Institutional Knowledge and Documentation

8.1 Maintaining Consistency as Experienced Staff Retire

DeHavillard, who said she was five working days from retirement, described deliberate knowledge transfer, regular meetings among engineers, inspectors, and geologists, and leadership development within Ohio EPA. Comparing decisions across offices helps reduce inconsistent interpretations.

Ricks emphasized written guidance, policy, manuals, meeting minutes, and records of prior decisions. He also noted that interpretations and management approaches can change when they are not fixed in regulation. Documentation preserves context, but does not make every prior practice permanent.

8.2 Digital Liner-Construction Records

Asked about centralized digital as-built information and records from smart welding equipment, neither panelist identified a known example in their experience. That limited response should not be read as evidence that digital documentation is absent throughout either state.

9. Q&A Points Left Open

Current Ohio liner configurations: The exact soil thickness and GCL combinations needed confirmation from the state's design information and were deferred to the podcast.

A revised action leakage-rate method: Neither panelist supplied an updated method answering the question about a double-lined facility with a triplanar drainage geocomposite.

The origin of the 30-year period: The exchange did not establish a documented historical basis for the duration. It should not be inferred from the informal comments made during the session.

Additional audience questions: The moderator said unanswered questions, including those from other time-zone sessions, would be addressed in a follow-up podcast.

10. Announcements

Stark announced a four-part geomembrane welding basics short course in early December in place of another monthly webinar. He also highlighted FGI membership, monthly technical member meetings, the online learning center and PDH program, and the institute's LinkedIn presence.

The recording, presentation slides, and follow-up podcast were to be made available through FGI. PDH certificates were to be sent automatically to participants who attended the entire webinar. The session closed with thanks to the panelists and recognition of DeHavillard's service ahead of her retirement.

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