Office of Regulatory Management

Economic Review Form

Agency name	Department of Environmental Quality (“Department”)
Virginia Administrative Code (VAC) Chapter citation(s)	NA – DEQ Guidance Document
VAC Chapter title(s)	NA – DEQ Guidance Document
Action title	NA – DEQ Guidance Document
Date this document prepared	June 8, 2026
Regulatory Stage (including Issuance of Guidance Documents)	Issuance of Guidance Document – ACG-016 and LPR-SW-2026-01, Early Detection and Management of Elevated Temperature Landfills

Cost Benefit Analysis

Complete Tables 1a and 1b for all regulatory actions. You do not need to complete Table 1c if the regulatory action is required by state statute or federal statute or regulation and leaves no discretion in its implementation.

Table 1a should provide analysis for the regulatory approach you are taking. Table 1b should provide analysis for the approach of leaving the current regulations intact (i.e., no further change is implemented). Table 1c should provide analysis for at least one alternative approach. You should not limit yourself to one alternative, however, and can add additional charts as needed.

Report both direct and indirect costs and benefits that can be monetized in Boxes 1 and 2. Report direct and indirect costs and benefits that cannot be monetized in Box 4. See the ORM Regulatory Economic Analysis Manual for additional guidance.

Table 1a: Costs and Benefits of the Proposed Changes (Primary Option)

(1) Direct & Indirect Costs & Benefits (Monetized)	**This action will issue Guidance Document ACG-016 and LPR-SW-2026-01 - Early Detection and Management of Elevated Temperature Landfills** Elevated temperature landfill (ETLF) conditions have recently occurred at multiple permitted municipal solid waste (or sanitary) landfills in Virginia. These landfills are performing required air and solid waste regulatory monitoring, but some did not respond to impending ETLF conditions when detected. This has resulted in noxious odors, unpermitted discharges of leachate to surface water, and skyrocketing costs beyond available financial assurance. Therefore, DEQ is taking a unified multi-media approach to address landfills with rising temperatures to ensure that ETLF conditions are recognized and addressed. The purpose of this guidance document is to ensure early detection of ETLFs through proactive monitoring, to ensure appropriate financial assurance from owner/operators, and to establish appropriate corrective actions to avoid additional negative environmental impacts in Virginia. **Direct Costs:** As guidance, Early Detection and Management of Elevated Temperature Landfills does not impose any direct costs on stakeholders or the Department. The guidance outlines additional monitoring for ETLFs. The infrastructure for this monitoring is already in place. This guidance outlines an increased sampling and reporting schedule, which can be implemented through permit modification as outlined in the Virginia Solid Waste Management Regulations (VSWMR). **Indirect Costs:** The primary indirect costs associated with this guidance are associated with staff time for local governments and municipalities as well as privately owned and operated landfills. The guidance outlines additional monitoring for ETLFs. The infrastructure for this monitoring is already in place, although it may need to be updated at higher temperatures. Indirect costs from more frequent monitoring may be incurred through lab fees, staff or contractor time to conduct monitoring, or staff time to compile and send reports and monitoring data to the Department. These indirect costs are variable, and dependent on the location, staff resources, landfill size, and tiered risk category, and so cannot be accurately estimated. **Direct Benefits:** The updated suggested monitoring schedule outlined in this guidance document directly benefits local governments, stakeholders, and the Department. Benefits include:

	- Reduction of risk to human health and the environment through an enhanced monitoring frequency identifying developing ETLFs before they reach an advanced stage - Reduction of risk to the environment by monitoring conditions which could lead to increased accumulation of leachate reaching state waters - Reduction of risk to stakeholders near an impacted ETLF through identifying conditions before noxious odors develop and impact the surrounding areas - Reduction of risk to stakeholders, as abandoned ETLFs without appropriate coverage by Financial Assurance may become a burden upon taxpayers - Reduction of risk of continued or worsened elevated temperature conditions and potentially early closure of facilities. **Indirect Benefits:** The indirect benefits of this guidance document are clarification of categories and increased monitoring requirements. These requirements are not implemented through this guidance document, as the Virginia Solid Waste Management Regulations (VSWMR) in 9VAC20-81-600 provide the Department with the authority to modify landfill permits. Additionally, 9VAC20-81-430 of the VSWMR specifies the Department Director may include conditions in solid waste permits which the Director finds necessary to protect public health or the environment or ensure compliance with the VSWMR. In addition, the Financial Assurance Regulations (9VAC20-70) require that facility owners or operators provide financial assurance for closure, post-closure care and groundwater corrective action costs. This guidance action will not only lower the risk of facility abandonment occurring as a result of an ETLF event, but will also lessen the impact of closure, post-closure care and groundwater corrective action costs falling to the Commonwealth in the event of facility abandonment by the owner or operator.	
(2) Present Monetized Values	Direct & Indirect Costs	Direct & Indirect Benefits
	(a) As guidance, there are no direct costs. The indirect costs are not able to be monetized, as they are associated with additional staff time and site conditions, are thus variable.	(b) The direct and indirect benefits are variable and cannot be accurately estimated. An indirect benefit to this action is detecting ETLF conditions early enough where protective measures can be taken to minimize costs associated with conditions worsening.
(3) Net Monetized Benefit	NA	

(4) Other Costs & Benefits (Non-Monetized)	Unknown
(5) Information Sources	Department staff that work on permitting, compliance, and financial assurance.

Table 1b: Costs and Benefits under the Status Quo (No change to the regulation)

(1) Direct & Indirect Costs & Benefits (Monetized)	**Direct Costs:** The "status quo" option would be to not issue any guidelines. While it would not impose any direct costs on the Department, the necessary modifications which may be issued through the VSWMR would be unaffected by this option. The costs to stakeholders would be a lack of clear guidelines following the implementation of the changes needed. **Indirect Costs:** The "status quo" option would be to not issue any guidelines. The primary indirect costs with the "status quo" are the local government, stakeholder, and Department staff time to resolve compliance issues. The Department is unable to quantify these costs. The indirect cost to the public health and the environment if at risk sites are not monitored and develop into ETLF cannot be quantified but could be substantial. **Direct Benefits:** There are no known direct benefits to maintaining the "status quo". **Indirect Benefits:** There are no known indirect benefits of maintaining the "status quo".	
(2) Present Monetized Values	Direct & Indirect Costs	Direct & Indirect Benefits
	(a) As guidance, there are no direct costs. Unable to monetize indirect costs associated with the status quo, but ETLF conditions can increase the cost of operating a landfill by an estimated tens of millions of dollars.	(b) There are no known direct or indirect benefits to maintaining the status quo.
(3) Net Monetized Benefit	NA	
(4) Other Costs & Benefits (Non-Monetized)	NA	

(5) Information Sources	NA

Table 1c: Costs and Benefits under Alternative Approach(es)

(1) Direct & Indirect Costs & Benefits (Monetized)	The Department is not aware of any alternatives to the current proposal besides the "status quo" option.	
(2) Present Monetized Values	Direct & Indirect Costs	Direct & Indirect Benefits
	(a) NA	(b) NA
(3) Net Monetized Benefit	NA	
(4) Other Costs & Benefits (Non-Monetized)	NA	
(5) Information Sources	NA	

Impact on Local Partners

Use this chart to describe impacts on local partners. See Part 8 of the ORM Cost Impact Analysis Guidance for additional guidance.

Table 2: Impact on Local Partners

(1) Direct & Indirect Costs & Benefits (Monetized)	**Direct Costs:** As guidance, this guidance document does not impose any direct costs on local partners or the Department. The guidance outlines additional monitoring for ETLFs. The infrastructure for this monitoring is already in place. This guidance outlines an increased sampling and reporting schedule, which can be implemented through permit modification as outlined in the Virginia Solid Waste Management Regulations (VSWMR). **Indirect Costs:** The primary indirect costs associated with this guidance document are associated with staff time for local governments and municipalities as well as privately owned and operated landfills. The guidance outlines additional monitoring for ETLFs. The infrastructure for this monitoring is already in place. Indirect costs from more frequent monitoring may be incurred through lab fees, staff or contractor time to conduct monitoring, or staff time to compile and send reports and

	monitoring data to the Department. These indirect costs are variable, and dependent on the location, staff resources, landfill size, and tiered risk category, and so cannot be accurately estimated. **Direct Benefits:** The updated suggested monitoring schedule outlined in this guidance document directly benefits local governments, stakeholders, and the Department. Benefits include: - Reduction of risk to human health and the environment through an enhanced monitoring frequency identifying developing ETLFs before they reach an advanced stage - Reduction of risk to the environment by monitoring conditions which could lead to increased accumulation of leachate reaching state waters - Reduction of risk to stakeholders near an impacted ETLF through identifying conditions before noxious odors develop and impact the surrounding areas - Reduction of risk to stakeholders, as abandoned ETLFs without appropriate coverage by Financial Assurance may become a burden upon taxpayers **Indirect Benefits:** The indirect benefits of this guidance document are clarification of categories and increased monitoring requirements. These requirements are not implemented through this guidance document as the Virginia Solid Waste Management Regulations (VSWMR) in 9VAC20-81-600 provide the Department with the authority to modify landfill permits. Additionally, 9VAC20-81-430 of the VSWMR specifies the Department Director may include conditions in solid waste permits which the Director finds necessary to protect public health or the environment or ensure compliance with the VSWMR. An additional indirect benefit to local partners is a reduction in potential compliance issues as a result of potential permit changes, as this guidance document outlines categories, changes, and permit requirements. .	
(2) Present Monetized Values	Direct & Indirect Costs	Direct & Indirect Benefits
	(a) As guidance, there are no direct costs but ETLF conditions can increase the cost of operating a landfill by an estimated tens of millions of dollars	(b) (b) The direct and indirect benefits are variable and cannot be accurately estimated. An indirect benefit to this action is detecting ETLF conditions early enough where protective measures can be taken to minimize costs associated with conditions worsening.

(3) Other Costs & Benefits (Non-Monetized)	NA
(4) Assistance	NA
(5) Information Sources	NA

Impacts on Families

Use this chart to describe impacts on families. See Part 8 of the ORM Cost Impact Analysis Guidance for additional guidance.

Table 3: Impact on Families

(1) Direct & Indirect Costs & Benefits (Monetized)	**Direct Costs:** There are no direct costs that impact families associated with this guidance. **Indirect Costs:** There are no indirect costs that impact families associated with this guidance. **Direct Benefits:** There are no direct benefits that impact families associated with this guidance. **Indirect Benefits:** There are no indirect benefits that impact families associated with this guidance.	
(2) Present Monetized Values	Direct & Indirect Costs	Direct & Indirect Benefits
	(a) NA	(b) NA
(3) Other Costs & Benefits (Non-Monetized)	NA	
(4) Information Sources	NA	

Impacts on Small Businesses

Use this chart to describe impacts on small businesses. See Part 8 of the ORM Cost Impact Analysis Guidance for additional guidance.

Table 4: Impact on Small Businesses

(1) Direct & Indirect Costs & Benefits (Monetized)	Generally, the guidance would not impact small businesses unless they owned landfills that would be covered by the circumstances described in the guidance document. Small businesses would be impacted in the same manner as described in Table 1a above. The department is unaware of any small businesses that would be impacted by the proposed guidance.	
(2) Present Monetized Values	Direct & Indirect Costs	Direct & Indirect Benefits
	(a) See Table 1a.	(b) See Table 1a.
(3) Other Costs & Benefits (Non-Monetized)	See Table 1a.	
(4) Alternatives	NA	
(5) Information Sources	NA	

Changes to Number of Regulatory Requirements

Table 5: Regulatory Reduction

For each individual action, please fill out the appropriate chart to reflect any change in regulatory requirements, costs, regulatory stringency, or the overall length of any guidance documents.

Change in Regulatory Requirements

VAC Section(s) Involved*	Authority of Change	Initial Count	Additions	Subtractions	Total Net Change in Requirements
NA – Guidance Document	**(M/A):**				
	(D/A):				
	(M/R):				
	(D/R):				
				Grand Total of Changes in Requirements:	**(M/A):**
					(D/A):
					(M/R):
					(D/R):

Key:

Please use the following coding if change is mandatory or discretionary and whether it affects externally regulated parties or only the agency itself:

(M/A): Mandatory requirements mandated by federal and/or state statute affecting the agency itself
(D/A): Discretionary requirements affecting agency itself
(M/R): Mandatory requirements mandated by federal and/or state statute affecting external parties, including other agencies
(D/R): Discretionary requirements affecting external parties, including other agencies

Cost Reductions or Increases (if applicable)

VAC Section(s) Involved*	**Description of Regulatory Requirement**	**Initial Cost**	**New Cost**	**Overall Cost Savings/Increases**
NA – Guidance Document				

Other Decreases or Increases in Regulatory Stringency (if applicable)

VAC Section(s) Involved*	**Description of Regulatory Change**	**Overview of How It Reduces or Increases Regulatory Burden**
NA – Guidance Document		

Length of Guidance Documents (only applicable if guidance document is being revised)

Title of Guidance Document	**Original Word Count**	**New Word Count**	**Net Change in Word Count**
Guidance Memo No. ACG-016 and LPR-SW-2026-01, Early Detection and Management of Elevated Temperature Landfills	NA – New guidance document, not revision		

*If the agency is modifying a guidance document that has regulatory requirements, it should report any change in requirements in the appropriate chart(s).